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ABSTRACT

The purpose of this pilot study was to describe the participation of farm women in farm work in one California country. Women from 228 farms, approximately 55 percent of the farms in Yolo County, California, were interviewed by telephone concerning their efforts and roles on the family farm. The study found that the main criterion of whether or not the women actively participate on the farm appears not to be farm size as much as the need for the extra work women supply as part of the family unit. Thus, the woman is less likely to be involved in the operation when labor can be sufficiently tapped through the husband, the male children, the extended family, or hired help. On the other hand, if such sources of labor are unavailable or if the husband has an off-farm job, then the woman can be expected to have a greater degree of involvement in each of the three dimensions of farming: decision making, production tasks, and management support services. The study also found that women who are more involved tend to be better educated, younger, and more cognizant of problems encountered by farm women. They are also more likely to live on the farm and to perceive technology as having increased female activity in farming. The study concluded that women participate in farming much more than is generally recognized. Given current trends, their involvement in both decision making and task participation will continue to grow. Besides these two crucial areas, women contribute to farming by working outside jobs to help support marginal farm operations. (This report contrains an eight-page bibliography as well as extensive tables and the survey form to gather data.) (KC)

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The Role of Women in Farming:

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Applied Behavioral Sciences
University of California
Davis, CA 95616

THE ROLE OF WOMEN IN FARMING:

an Exploratory Study of the Relative Impact Women Have on the Farm Enterprise in Yolo County, California

Research Director: Orville E. Thompson, Professor
Applied Behavioral Sciences

Researchers/Writers: Douglas Gwynn, Research Sociologist
Charlotte Sharpe, Research Assistant

Literature Review: Jan Wescott, Research Assistant

We would like to acknowledge the editorial advice and contributions of Virgil L. Palmer, III, Postgraduate Researcher

Department of Applied Behavioral Sciences
University of California, Davis

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Preface

This research project was several years in the making. The original idea was generated by the researchers' long time interest in the problems, barriers and concerns of females who in recent years have increasingly sought careers in agriculture. This study on the problems encountered by college graduates in agriculture when seeking entry into a career in the industry raised many questions. Among them was the absence of information in the literature on the past and present roles that women perform in the agricultural industry and particularly in farming.

Observations suggested a need for information on the present functions and roles farm women were fulfilling on commercial family owned farms in California. Since no prior studies on this topic in California existed, this project was designed as a pilot study in one county (Yolo) to test data gatnering instruments and to develop base line data for future researchers. Another important as well as interesting outcome of this study has been a profile of farm wives as they are today in Yolo County. Interesting as these findings are, they are not generalizable to the state. Similar studies in other locations must be completed before generalizations are possible.

This project has been the training ground for the following student research assistants: Sherill Hoy, Virgil Palmer, Charolotte Sharp, Linda Tochterman and Jan Westcott. Each contributed to the success of the project. Special appreciation is extended to Douglas Gwynn who played the major role in the collection and analysis of the data and the development of the monograph. Virgil Palmer played an important role in editing and completing the final draft.

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Summary

Women participate in farming much more than is generally recognized. Given current trends, their involvement in both decision-making and task participation will continue to grow. Besides these two crucial areas, women contribute to farming by working outside jobs to help support marginal farm operations.

In this study of farm women in Yolo County, California, the main criterion of whether or not they actively participate on the farm appears not to be farm size as much as the need for the extra work women supply as part of the family unit. Thus, the woman is less likely to be involved in the operation when labor can be sufficiently tapped through the husband, the male offspring, the extended family or hired help. On the other hand, if the above sources of labor are unavailable or the husband has an off-farm job, then the woman can be expected to have a greater degree of involvement in each of the three dimensions of farming: decision-making, production tasks and management support services.

Women who are more involved tend to be better educated, younger and more cognizant of problems encountered by farm women. They are also more likely to live on the farm and to perceive technology as having increased female activity in farming.

INTRODUCTION

Recent data indicate that the participation of women in farming is rapidly increasing. U.S. Department of Labor Statistics show that the number of women employed solely or principally as farm operators and managers doubled between 1970 and 1980. The Census of Agriculture for California reports that women who were farm operators increased from 7.6% in 1978 to 9.4% in 1982. Even these numbers underestimate the active role many women play in farming since the Census of Agriculture only designates one person per farm as the operator. A special study by the United States Department of Agriculture (USDA) showed that in such cases the husband is usually selected as operator although the wife may share responsibilities in running the farm (Ross 1983). When females are designated as the principal operator, they usually are widows of farmers or run the farm enterprise alone. Studies elsewhere also reveal that the role of women in farming is increasing (Conrad 1981; Pearson 1980; Smith 1979).

Purpose of Study

Studies on the role of women in farming have not been undertaken in California despite the state's prominence as the leading agricultural producer in the nation. For this reason a pilot study on the topic was conducted in Yolo County--a study which would serve both as a benchmark for future research in Yolo County as well as a first step from which research on the role of women in farming in other counties of California can be based.

The objectives of the project are:

- Finding the "state of the art" on research across the U.S. on roles of women in farming.

- Find how technological change is affecting the role of women in farming.
- Find pertinent demographic information on women in farming in California.
- Determine the functions and tasks farm women generally carry out on the farm.
- Determine how the role of farm women is influenced by farm size or by type of farming operation.
- Find how farm women feel about their roles in the farming operation.

In addition, the roles women play in the various types of tasks and decision-making whether production, physical labor, management support or homemaking was seen as important to establish. The participation of women would likely vary according to the type of activity since each of these dimensions is distinct. Various characteristics of women, including but not limited to age, education and income, were broken down into sub-dimensions to better understand the depth of the roles women play in farming. Two examples included how women with a university education in agriculture differed from those with a university education in non-agricultural areas, and how women of a particular age range with young children varied from those within the same age range without children.

An examination of over 200 variables provided clues not only to the multidimensional roles women play in agriculture in California but also insights into problems and characteristics of California agriculture itself.

Population and Methodology

This is a study of women representing 228 farms in Yolo County. Female "farm laborers" were not examined, but rather women who were either farm

operators or married to farm operators. In addition, only those actually owning farmland were selected, eliminating 18.6% of the farm operators in Yolo County who are solely tenant farmers.

Yolo County was selected as the study site due to the importance of farming in the area as well as to the diversity of agriculture practiced within its boundaries. More than 85% of the land area is farmed making agriculture the county's largest industry. Major crops include tomatoes, wheat, rice, corn, sugar beets, almonds, alfalfa, walnuts, barley and melons.

The population was chosen by crossing a list of farm equipment owners prepared by the Yolo County Assessor's Office with a list of farm owners from the Agricultural Stabilization Board. A population of 418 persons who operate and own their own farms was drawn by selecting only those names appearing on both lists.

Although these lists are as complete as any available, they did not contain the names of every farm in operation during the data collection period. We excluded both tenants and corporations not family held, as well as any additional farms owned by members of the same households. Consequently, the selected population consisted of 55% of the farms in Yolo County.

The data used were collected by telephone survey conducted in Yolo County between January and May of 1984. A letter was sent initially to introduce the study and solicit cooperation. Approximately a week later a phone call followed at which time the interview took place or an appointment was scheduled. Each phone interview took approximately 20 minutes to complete.

We were unable to obtain addresses for 72 farm operators. Nine had incorrect numbers listed and seven of the women were non-English speaking. Another 45 were eliminated because they did not satisfy the set criteria; 228

out of 286 respondents completed the entire interview, a response rate of 80%.[1]

An analysis of available data on farm characteristics obtained from the lists indicated that those refusing to participate or those contacted did not vary significantly from the study population. Finally, based on categories of farm size found in the 1981 Census of Agriculture, data were weighted to match that reported for Yolo County in the Agricultural Census.

Hypotheses

Based on an extensive study of the literature (described in this report) seven hypotheses were developed. They are as follows:

1. Women's involvement in farming will be negatively related to both the size of the farm operation and income derived from farming.

2. Women's involvement in farming will be positively related to participation of the extended family in the farming operation and negatively to the use of hired labor.

3. Women's involvement will be more positively related to certain types of agricultural production such as raising animals than other types.

4. Women's involvement will be positively related to their awareness of problems for women on farms and the desire for changes in the division of labor.

5. Women's involvement in farming will be positively related to education and negatively related to age and position in the life cycle.

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[1]Response rates were calculated as a percent of actual contacts ending with completed interviews, and not as a percent of original sample size. (See Don Dillman's Mail and Telephone Surveys: The Total Design Method [1978], John Wiley and Sons Publishing Company.)

6. Women's involvement in farming will be positively related to current residence on the farm, past experience on a farm and to identification with farming as a profession.

7. Women's involvement will be positively related to their perception that technology has allowed greater participation on the farm.

Regarding the last hypothesis, there is considerable debate in the literature on the impact of technology and mechanization on the roles of farm women. Some suggest that the role women play in decision-making and task participation is decreasing as farming systems become larger and more technologically complex (Scheuring and Thompson 1978; Sweet 1972; Wells 1970; Wilkening 1963). In contrast, others report that the technology of labor saving devices afford women more time for active participation in the farming operation and that mechanization has replaced the need for physical strengths to the degree that women can perform tasks previously not possible for them (Dormer 1981; Huffman 1976). The researchers believe the latter position is more likely to be correct.

REVIEW OF THE LITERATURE

An extensive review of all available literature on farm women published in the last 15 years was made. This consisted of a total of 684 articles which were subsequently classified and are described here.

Until recently, little effort has been made to evaluate the impact of farm women's participation on the family farm or in the rural community in North America. Additionally, virtually no attempt has been made to assess the needs of these "invisible farmers." Early references to North American farm

women are usually tucked into historical accounts of pre-industrial America and frontier life. Although these descriptions tend to be general, they provide insights into the value of farm women's work.

The household produced and manufactured most items in this early period. The importance and worth of the woman's contributions was recognized in pre-industrial America "even though she was relegated to a secondary position in attitude, law and practice." (Hartman 1973) The arduous physical conditions of the times necessitated the manufacture and production of most items required for the family's subsistance. Comparison of this pre-industrial role with that of the modern-day farm woman has served as the basis for scholarly investigations into the effects of modernization on the role of farm women. From this comparison has been derived the hypothesis that modernization has reduced women's economic/productive role on the farm. This hypothesis and the disputes surrounding it will be dealt with in greater detail in the section on farm tasks.

As homesteaders moved west and began to take up land claims, the government and the Grange finally took notice of the "farmer's wife" in part because of the oppressive loneliness and isolation suffered by frontier women. In recognition of the isolation problem, the Grange initiated programs to facilitate social contact for women in the early 1900s (Hargreaves 1976). It is interesting to note that the Grange and the Farm Bureau have not made any radical changes in their approach to farm womens' needs and its programs for farm women still fall within the social contact sphere. According to the literature on women during the homesteading era, it was not uncommon for women to break away from their traditional roles and homestead alone. In fact, it has been estimated that women held one-third of the land in the Dakotas in

1887 (Hargreaves 1976). There was, however, a catch to women's access to land--only single women were eligible to file homestead claims. The underlying reasoning behind this law appears to be connected to the perpetuation of male dominance in commercial farming with the assumption being that single women would marry and cede land ownership to men. This is one of the major factors contributing to male control over productive assets (Salaman 1979). With respect to this discriminatory land parcelling policy, Grace Fairchild, an early homesteader, commented that, "It always looked to me as if the government were run by men and all the laws were made for them." (Hargreaves 1976)

The next noticeable period of recognition of farm women occurred during World War II when the availability of farm labor decreased and demand for agricultural products increased. "Women filled in the gaps not only in the traditional tasks of packing and canning, but also in regular farmwork." (Baker 1964) In recognition of farm women's myriad responsibilities during this time, a New York newspaper editor reported farm women's per annum estimated economical value at $100,000. During this same period, the USDA sponsored the women's land army to recruit female agricultural laborers. Baker suggests that this period of urgency served to break down the traditional oppostion of farmers to employing female farmers.

In reviewing the literature on North American farm women from past to present, one notices a puzzling gap between the post World War II period and the recent past. The recent upswing in literature on North American farm women can be attributed in part to the rapid increase in data collected on the plight of women in agriculture in underdeveloped countries (Boserup 1970). The wealth of information now available on women's roles in farming systems in

the Third World has no doubt spurred researchers to investigate the roles of farm women in their own "developed" countries. This phenomenon is not unique to North America. Social scientists in Europe have only recently begun to acquaint themselves with the roles of farm women to their countries. Gasson (1981), who noted that more information was available on women in agriculture in the Third World, undertook a study on the roles of farm women in England and Wales, discovering that women, contrary to the British academicians portrayal of farm laborers as men, comprised one-fourth of the hired farm labor in England. Consideration of the needs of Italian farm women revealed that more education and advanced agricultural training should be made available to these women to advance their management skills and solidify their roles as producers (Gasson 1981).

As the women's liberation movement gained momentum, women's communication networks sprung up. These networks facilitated the flow of information on women's issues to the general public. In connection with this flow of information, scattered articles about farm women burdened by heavy inheritance taxes began to appear. As farm women became more vocal about their rights and needs, social scientists' interest in farm women was piqued. Moreover, farm women began organizing conferences to generate more information about their need to be recognized as full farming partners. In July, 1982 the Equity Policy Center (EPOC) held its first in a series of seminars on "Women, Farming and Modernization" to dispel the notion that the importance of the producer role played by farm women declines as farms modernize.

One of the first aspects of the roles of farm women to be targeted for research in North America was involvement in decision-making (Hill 1981; Sweet 1972; Wilkening and Morrison, 1963; Wilkening and Bharadwaj 1967). Initial

studies are noteworthy because they go beyond the general descriptions of the "farmer's wife." However, decision-making is only a part of the myriad roles performed by farm women, a fact scholars realized as ever-increasing numbers of studies on the "role of farm women" rolled off the press. Some of the literature addresses the multiple roles of farm women, including those of farmer, homemaker, breadwinner and community member (Dunkle et al. 1981; Hill 1981; Ross 1983; Salant 1983; Scholl 1982). Current studies in this domain are most often concerned with illustrating the degree of involvement by farm women in the major areas of commercial farming. To facilitate their task, researchers have disaggregated the concept of "role" into more manageable units of study, including the role of farm women in decision-making, farm tasks, off-farm employment and agricultural organizations. However, as Gasson points out, in our zeal to define these roles we need to remember that a role is more than a "sum of activities. A role has associated actions, responsibilities and relationships . . . and . . . is varied within the economic, social, cultural and historical context." (Gasson 1981) The Jones and Rosenfeld pan North American study on farm women confirms this concept of role variation, especially within different geographical regions. For example, farm women in the southern states were reported to be less active in farm-related tasks and more likely to be employed off farm than their counterparts in the west (Jones and Rosenfield 1981).

Profiles of farm women from different geographical regions across North America are now available (California, Colorado, Florida, Georgia, Illinois, Iowa, Kentucky, Mississippi, North Carolina, North Dakota, Oklahoma, Tennessee, Wisconsin). The increase in their numbers is encouraging and the information provided valuable not only because of our heightened awareness of

farm women's contributions but also because of a recognition that involvement and attitudes vary according to geographic area. New frontiers are opened to researchers with respect to possible socioeconomic, historical and cultural variables affecting farm women's roles.

Decision-Making

Although most of the aforementioned studies focus on female involvement in farm-related tasks and variables affecting that involvement, farm women's role in management and decision-making also receives attention. Recognition and status are often associated with the level of decision-making and related authority. Studies have determined that women who are more actively involved in farm tasks are also more involved in decision-making (Jones and Rosenfeld 1981). Another important variable affecting female input into important farm-related decisions is whether their names appear on leases and/or landownership documents. In her study on central Illinois, Salaman points out that previous research has ignored farm ownership as an important determinant in decision-making and that the "woman who controls land in her name is able to wield power and influence." (Salaman 1979) Census data in Colorado show an increase in female farm managers--a fact that Pearson (1980) attributes to changing economic and attitudinal factors as well as to the general aging of the farm population. Other authors point out that female ownership and decision-making statistics are inflated by the fact that older women who out-lived their spouses received title to farmland and the accompanying responsibility for decision-making (Ehlers 1983; Waters and Geisler 1982). In a profile of female farm operators, Kalbacher (1983) found that women play a greater role in agriculture as farm owners than as farm operators. Women operate

approximately 4% of U.S. farmland and their farms tend to be small (285 acre average) and of low value ($20,000 gross farm values in 1978).

On the other hand, changing legal factors in North Dakota account for the greater role that women have in decision-making. New community property and inheritance laws have encouraged rural women to challenge traditional role expectations (Conrad 1981). In Scheuring's oral history of change in California agriculture, she reports that farm women are mainly supportive of their husbands role and tend to be only peripherally involved in decision-making. Scheuring attributes this role in decision-making to the greater complexity of farm management strategies as a result of advancements in technology and mechanization (Scheuring and Thompson, 1978).

It has also been suggested that women who marry men who have been farmers for a number of years play a less active role in making business decisions than those women who take up farming with their husbands (Gasson 1981). Implications for role sharing appear greater when husbands and wives take up farming together. A 1982 study of Wisconsin farm couples indicates that those farm women most satisfied with their role are those who are jointly involved in homemaking (Linn 1982).

Some of the above studies are quite elaborate in breaking down decision-making into categories such as garden-related, household-related and major farm and finance-related decisions. The Downie and Gladwin (1981) study of Florida farm women approaches decision-making in this manner. Findings of this study indicate that whereas men make most of the farm-related decisions, women make more decisions on their own when children, gardening and off-farm work are considered. The authors conclude that most important family decisions such as finances, for example, are made jointly. The Smith (1979)

case study of Louisiana farm women points out that although small farm families are still traditionally-oriented, the women have increasing control over financial affairs and decision-making. The value of these findings, however, is questionable since most of the studies are administered as survey questionnaires dealing with one point in time. Moreover, these categories overlap. Given the nebulous nature of measuring decision-making, it is difficult to draw conclusions on actual levels of decision-making within the household. As Hill (1981) aptly points out, women's roles as decision-makers are less perceived than their roles in farm task participation--less perceived by researchers as well as farm men and women themselves. One woman, whose husband is employed off-farm remarked at a small farm conference in California that she makes all the farm-related decisions but in such a way as to make her husband think that he is solely responsible for the decisions. An interesting aspect of this segment on decision-making is that the Jones and Rosenfield study concludes that 90% of the women surveyed in their study express satisfaction with their level of decision-making.

Organizations

Among the studies dealing with female involvement in farm organizations, the consensus is that women need to acquire more influence in these organizations to ensure their recognition as producers and permit policy-makers to benefit from their experiences and perspectives on farming (Pela 1979). A study on rural Canadian women points out that rural women may be perceived as less involved or less interested in their enterprises if denied access to organizations (Canadian Council on Rural Development 1979).

Although many farm women belong to some agricultural organization (almost 50% of North American farm women belong to one or more organizations and the

average farm woman in England belongs to 3.4 farm organizations) their involvement at the policy-making level is negligible (Gasson 1981; Jones and Rosenfeld 1981). In this connection, Hill (1981) argues that "home economists quickly moved into the Agricultural Extension Services and helped segregate women's issues from agriculture. Consequently, they perpetuated the myth that women did not farm and should be shielded from the physical burdens and managerial strains of farming." Although some farm women have begun to break away from the Grange and Farm Bureau's home economics oriented programs to form their own organizations such as American Agri-Women (AA), Women Involved in Farm Economics (WIFE) and California Women for Agriculture (CWA), they do not focus on specific farm women's issues. An example is the CWA which has gained the reputation of being a formidable political force in California. CWA has focused on promoting the interests of the farmer agribusiness sector of the ag economy (Wood and Thompson 1981).

Flora sees such activist involvement by farm women as either part of a movement to defend class interests or as an attempt to "retreat to some past golden age of independent land ownership and production control." (Flora, 1970) This analysis is debatable on the grounds that farm women and men may not have a class consciousness. Rather than comprising a certain class, women actively involved in the above organizations fall into a higher socioeconomic group than those who are not active in these organizations. Indeed, it is widely recognized that those of a higher socioeconomic status are often more politically active than those of a lower status (Staudt 1981).

In sum, it appears that farm women do not see themselves involved in a class struggle. Nor do they see activism in organizations as necessary to elevate their status as female producers. Based on the literature, the

primary concern is survival of its family farm and their accompanying lifestyle. Data gathered in the Jones and Rosenfeld study of North American farm women supports this idea, namely that, "farm women identify primarily with their status as producers or members of agricultural enterprises, and only secondarily with their status as women in the field."

Farm Tasks

One of the main criteria used by researchers to define farm women's role is the extent of their involvement in farm tasks. Time use studies have been the primary tool for determining how much time farm women devote to farm-related tasks, housework and gardening. Findings from a Florida study show that women averaged 2.2 hours of farmwork per week compared to 44.9 hours per week for men. However, when housework and off-farm work are added to these figures, women average 65.7 hours work per week compared to the men's 56.8 hours (Downie, 1981). Canadian farm women averaged 81 hours worked per week, 27.1 of which were devoted to farmwork. The 1964 Census of Agriculture reported that farm women contribute an average of 19.9 hours per week to farm tasks (Huffman 1976).

Although such time use data are useful in illuminating the magnitude of women's contribution to farming, other important variables affecting female involvement in farm tasks deserves consideration. Much research has focused on the extent to which structural characteristics of agricultural enterprises account for variations in female task participation (Ehlers 1983; Ross 1983; Wilkening and Ahrens 1979). Variables most often examined are farm size, farm type, off-farm work opportunities, family cycle, wife's age, husband's age and family educational level. Findings revealed that women with less education are more likely to be high participators in farm tasks. Finally, size,

economic need and farm background, do not seem to be related to time spent on farm tasks. A Wisconsin study revealed that farm women with older husbands and without young children are more actively involved in farm tasks (Timper 1982). Another Wisconsin study indicated that women with dependent children are very actively involved until the oldest child reaches 18 years of age (Wilkening and Ahrens 1979).

With respect to how the type of farming enterprise impacts on participation in farm-related tasks, a study on American farm women showed that women are very active in the care of animals and in operations with livestock, and involved in a greater number of farm tasks on farms with a lower percentage of total sales from crops (Jones and Rosenfeld 1981). Additional studies have shown similar findings with physical participation greatest on farms with animal production and on farms of lesser economic value (Ross 1983; Wilkening and Ahrens 1979). Where labor intensive crops are produced, such as tobacco and vegetables, Florida farm women are described as "full time farmers, putting in as much time, energy and management skills as men." (Downie 1981) Other results have shown greater female participation in physical tasks where the farm enterprise is a primary operation (Ross 1983).

Rural employment opportunities seem to affect the degree of participation in farm tasks by women. A New York study by Buttel and Gillespie (1984) focuses on the interdependencies between labor force participation and farm task participation, particularly as affected by farm size and use of hired labor. Results show that women on larger farms tend to devote more time to on-farm work and less time to off-farm work, while hired labor tends to substitute for women's labor more on larger farms than on smaller ones.

It has also been reported that farm women in the southern part of the United States engage in fewer farm-related tasks than their counterparts in the north or west, but are more likely to be employed off-farm. Recognizing the important contribution farm women make to the farm enterprise through income earned off-farm, Salant in her 1980 study of Mississippi farm women reports and attempts to quantify "the degree to which farm women contribute to the economic viability of the farm through off-farm earnings." Barlett in her Georgia case study also stresses the increasing importance of the role of women in providing income through off-farm employment. It is often the only means of survival in times of bad weather and low prices (Barlett 1983).

Studies in Kentucky as well as in Georgia and in Mississippi relate patterns of off-farm employment to various socioeconomic and demographic factors. Findings indicate that women working off-farm tend to be younger and without children or older with grown children. They tend not to have a farm background, not to be residing on the farm, not to be very involved with the farming operation and not to be working full time. Also, they tend to come from higher income households involved in large operations (Barlett 1983; Bokemier 1983; Coughenour and Swanson 1983).

Some dissention exists in the literature concerning the percent of women who work off-farm. The farm wives in this group increased from 16% in 1959 to 26% in 1971, revealing a general trend towards off-farm employment. Bokemeier reports in a 1979 Kentucky study that about 30% of the farm women were working off-farm, while Salant reports in her 1980 study that over 75% were working off-farm in Mississippi and Tennessee. Despite these trends, it is likely that farm women in sparsely populated areas with few off-farm employment opportunities expand their roles in farm tasks. In Colusa County, California,

for example, many farm women "play an important role in the operation of the farm, serving as bookkeepers, machine operators, supervisors of work crews and skilled laborers" (Moles 1975) because of limited employment opportunities.

Obviously, farm women are not a heterogeneous group, their range of participation in farming operations varies from none to carrying out complex tasks such as driving and repairing hydraulic tractors. Based on the farm women's relationship to agricultural production or task involvement, Pearson, in her study of farm women in southeast Colorado, categorized farm women as either independent producers, agricultural partners, farm helpers or farm homemakers. In her discussion of these roles, Pearson (1980) notes that the female "agricultural partner" is a rarity. Past interviews with California farm women led to a similar conclusion. In most cases women consider themselves as playing minor roles in the enterprise, or as one woman states, "the team aspect is perhaps not so readily accepted." (Scheuring and Thompson 1978) Yet, Jones and Rosenfeld (1981) conclude that 55% of the farm women they surveyed considered themselves as the main operators in the farming operation. The usefulness of these categorizations or typologies is now being questioned. As Jones and Rosenfeld (1981) aptly point out, "by their nature and purpose, qualitative classifications emphasize separateness and discreteness of their categories while simultaneously de-emphasizing both the variability of the units within the categories and the continuity between them."

Farm labor allocation including household and off-farm activity is usually decided upon jointly and varies considerably throughout the year as well as over the years as new technology and ideas are introduced into the farming system. It is apparent then that the roles of farm women are not static but undergo gradual changes as the physical environment changes. With

increasingly modern technology, however, women's roles may alter more rapidly (Ahmad 1980; Hartman 1973). Therefore, among the calls for more research on farm women are those urging scholars to link farm women's inputs into structural changes in the farming enterprise over time (Murray 1981).

Farm Women's Roles and Technological Change

The effects of mechanization and technological innovations on the farming enterprise, farm family and rural community have been reported in the literature (Armitage 1984; Donaldson 1973; Flinn 1980; Madden 1978; Scheuring and Thompson 1978; Wells 1970). Farm sizes have increased to take advantage of mechanization and new technology. The number of farmers has greatly decreased as a result. Moreover, several writers on the subject of expansion of scale and mechanization argue that the use of family labor on the farm operation declines as the farming system becomes more technologically complex (Donaldson 1973; Flinn 1980).

As the need for family labor decreases with expansion of scale and adoption of new technology, one would expect the woman's role in the production process to decline in importance as well. Wilkening and Sweet's early research on the role of the farm women in decision-making indicate that the woman's role as decision-maker on larger farms is reduced (Hill 1981). Research by Scheuring and Wells support this finding. Based on research pertaining to farm women in Tanzania and in the Midwest, Hill (1981) argues that American farm women are affected as profoundly by structural changes in agricultural production and expansion of scale as women in underdeveloped countries. Or, where technology has been introduced into the production process, women have been "squeezed out" of their prior primary roles (Boulding 1980).

Gasson, in her study of English farm women, comes to a similar conclusion with respect to scale of enterprise. She maintains that the size of the enterprise distinguishes between the "helper" and the "housewife" (using Pearson's categories) such that the "helper" is usually found on smaller farms and is more active in farm tasks because of economic need. On the other hand, the farm housewife, more typical of larger enterprises, has the option to participate in farm tasks and helps out only occasionally (Gasson 1981).

More recent studies on farm women question and contradict the assumption that women play increasingly marginal roles in the production process as farm sizes expand and mechanization continues. Noteworthy among these is Timper's test of Parson's theory among farm women in Wisconsin. Findings from this research show that the instrumental role played by women on larger, more modern farms is comparable to that of women on less modern farms (Timper 1982). Timper does not stand alone in her belief that participation increases on more modern farms inasmuch as mechanization has replaced the need for physical strength. Dorner (1981) points out that not only are women more likely to engage in heavy farmwork with the advent of tractors, but labor saving devices in the household have allowed women to become more active participators in the farming enterprise. Armitage (1984) verifies this in her study contrasting farm women of 1900 with farm women of today.

It is also argued that as farming has become more specialized and complex so has the record keeping and bookkeeping. Farm women's contribution to this increased office work load has grown in many cases (Dorner 1981; Huffman 1976). Two separate studies of Illinois farm women indicate that female involvement in farm tasks are increasingly due to expanded use of tractor power as well as to the shortage and expense of employing skilled workers

(Glesne 1980; Salaman 1979). Economic reasons including lower commodity prices, higher production costs and higher labor costs are also cited in Pearson's study (1980) on Colorado farm women as contributing to more active participation in farm tasks.

Huffman (1976) agrees that the foregoing reasons are main contributors to a long term upward trend in female participation in farm tasks and adds that wives are often left to supervise the operation as more farmers are employed off-farm. Both Dorner (1981) and Armitage (1984) suggest that the technology of labor saving household devices afford women more time for active participation in the farming operation. Conversely, these same labor saving advances have allowed farm women to pursue off-farm occupations (Baker 1964).

Rural Canadian women are evenly divided on the issue of how mechanization and technological change have impacted upon their lives (Canadian Council on Rural Development 1979). Approximately one-half of the women surveyed felt that their workload had increased and the variety of their tasks expanded as a result of mechanization, while the remaining women felt that mechanization had reduced their work load.

It becomes apparent that the consequences of technological innovation and mechanization vary greatly depending on the type of farming enterprise, the location of the farm and the nature of the local economic base (Flinn 1980). Therefore, future studies on the impact of mechanization on farm women's roles should take these factors into consideration.

As the foregoing illustrates, little in-depth research has been undertaken with respect to the effects of modernization and expansion of scale on farm women's lives over time. Moreover, inasmuch as opinions on this topic vary greatly, the need for more and better research on the current and future

implications of structural change in agriculture on North American farms becomes obvious.

Recommendations

Scholarly investigation into the roles of North American farm women has contributed greatly to our understanding of the magnitude of tasks performed by farm women as well as the amount of time these women devote to farming. Moreover, many of these profiles go beyond the realm of general descriptions by presenting the reader with a summary of recommendations to address the particular needs of farm women.

Virtually all of the current studies in this domain underline the important economic contributions of farm women to the farming enterprise through unpaid labor and off-farm employment. Researchers are quick to point out the need for greater recognition of farm women's economic contribution to not only the family enterprise but also to the Gross National Product (GNP). It has been suggested that a change in attitudes concerning the definition of work needs to be promoted so that the term includes unpaid as well as paid labor. The Canadian study on rural women's roles and needs calls for a revision in tax legislation which would allow for wages paid to farm wives to be tax deductible. The Canadian Council on Rural Development (1979) argues that such legislation would not only serve to strengthen farm women's economic security but also enhance their self-esteem.

In light of farm women's multiple status with regard to the family farm enterprise, researchers conclude that a more efficient way of disseminating agricultural information relevant to farm women's needs is warranted (Jones and Rosenfeld 1981; Pela 1979; Timper 1982; WFIN 1983). Improving communication between Agricultural Extension Services and farm women as well as increasing

special training programs becomes particularly important as more farming males seek off-farm employment and leave farm management to women (Downie and Gladwin 1981; Salant 1983).

Expanded opportunities for education and advanced training in farm related and non-agriculturally related fields for rural women are cited by scholars as necessary prerequisites for enhancing the status of rural women. And, as Hill (1981) points out, "women respond very well to opportunities for increasing their technical knowledge of farming."

Consideration of rural women's needs reveals that not only is training in farm related areas deemed necessary but training for off-farm jobs is also becoming increasingly important. In many rural areas, increased mechanization and advanced technology has led to an expansion of off-farm agricultural management services and agriculturally related industries. Training programs for rural women geared to developing skills necessary to work in these areas could be especially beneficial.

Therefore, if training programs and information services are initiated to meet the needs of these women, it is essential that those involved in the planning and development of such programs have a good understanding of sex roles on the farm (Timper 1982).

Publications have sprung up dealing with the need to intensify research efforts as scholars have become more aware of the important policy implications linked to findings on the roles of farm women (Hill 1981; Flora 1978; Ehlers 1983; Murray 1981).

Useful suggestions as well as guidelines for research on the roles of farm women are set forth in these essays with the hope of encouraging more scholars to respond to the need for more and better data as well as improving methods of interpreting these data.

Now that a substantial amount of work has been done to assess the needs of these "invisible farmers," it becomes clear that one of the most salient issues impacting on the well-being of American farm women is the legal administrative practice of designating a single operator for the farming enterprise. This restrictive practice, as the Jones and Rosenfeld study reports,

> . . . will fail in important ways to recognize the contributions made by farm women to the vitality and productivity of American agriculture. And . . . from the perspective of farm women who are actively engaged in the day-to-day business of agricultural production, such an approach is inaccurate, sometimes demeaning and can be tragically unfair when husbands die. (Jones and Rosenfeld 1981).

Clearly, the rights of individuals within kin groups should be the basis for amending estate taxes, laws and inheritance procedures. Before such rights can be extended to farm women, however, their contributions to farming must be formally recognized.

FARM AND HOUSEHOLD CHARACTERISTICS

The average farm size of 541 acres in the selected population of farms is close to the Yolo County average (559 acres) according to the Census of Agriculture.

Over 37% of these farms reported row and grain crops such as wheat, rice, barley, tomatoes and other vegetables as accounting for 50% or more of their production. Almost one-quarter (24%) reported that fruit and nut crops made

up the majority of their production. Over 15% reported livestock and poultry products as constituting most of their production. This is compatible with the 1982 Census of Agriculture for Yolo County.

Table 1

Crops Ranked (Percentages)*

Relative Importance	1st	2nd	3rd	Less Important	Total Producing	Not Present
Tomatoes	12.7	4.2	1.1	0.8	18.0	81.2
Vegetables other than tomatoes	4.2	4.9	1.3	2.8	13.2	86.8
Rice	5.1	2.8	0.5	0.0	8.4	91.6
Wheat and/or Barley	12.7	15.5	8.5	1.9	38.6	61.4
Corn	3.6	5.9	2.3	1.7	13.5	86.5
Forage or other field crops	8.8	7.6	3.2	0.8	20.4	79.6
Fruits, nuts, firewood	24.5	2.9	1.1	1.2	29.7	70.3
Seed or nursery products	3.5	1.3	0.8	1.0	6.6	93.4
Livestock and/or poultry	7.6	5.0	0.8	1.5	14.9	85.1
Livestock, aprary and/or poultry products	8.0	1.5	0.3	0.0	9.8	90.2
Oil seed crops	0.3	1.1	1.8	1.5	4.7	95.3

*Ranked by respondents.

A more detailed breakdown of the relative importance of agriculture crops and products are ranked in Table 1. While row and grain crops are collectively the most important crops, tree crops are the single group most frequently mentioned as being the primary produce. Without taking into account ranking, more persons (38.6%) grow wheat and/or barley than any other crop. About 15% have livestock and/or poultry for meat production while about 10% produce products such as eggs and milk.

Differences between small, medium and large farms (including rented as well as owned land) were examined in regard to residence, hired labor and farm type. Small farms were classified as those less than 180 acres, medium farms fell between 180 and 2,000 acres while any farms greater than 2,000 acres were considered large.

Table 2

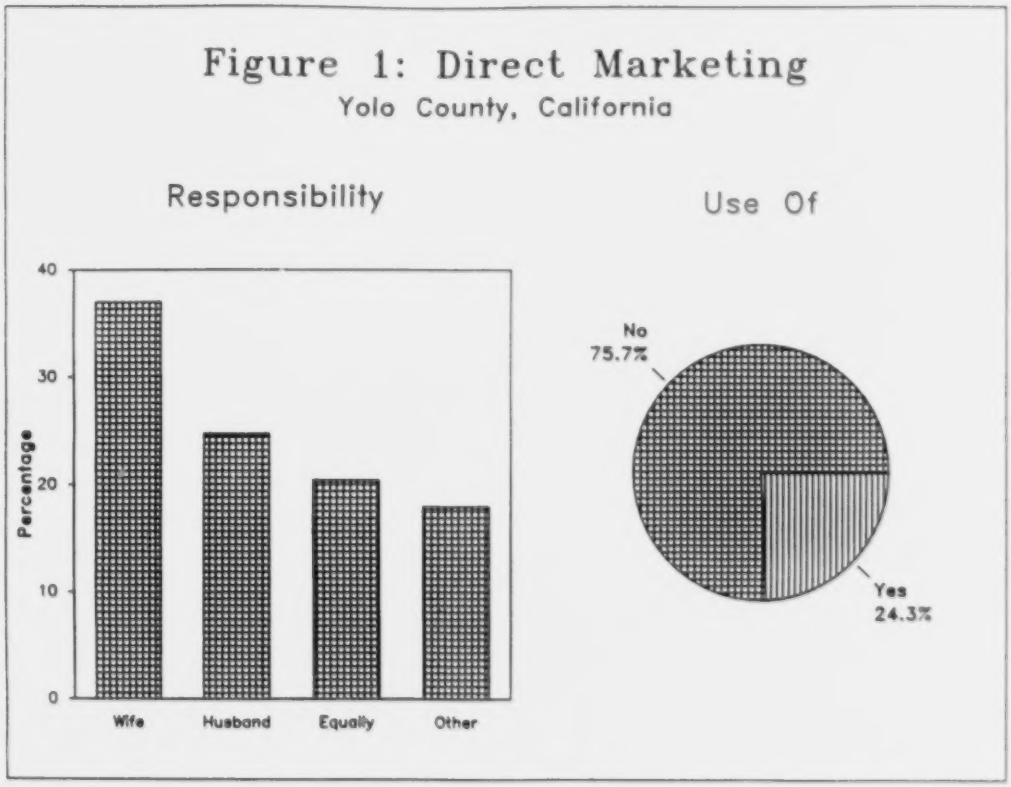
Mean Percentages for Farm Residence, Farm Type and Hired Labor

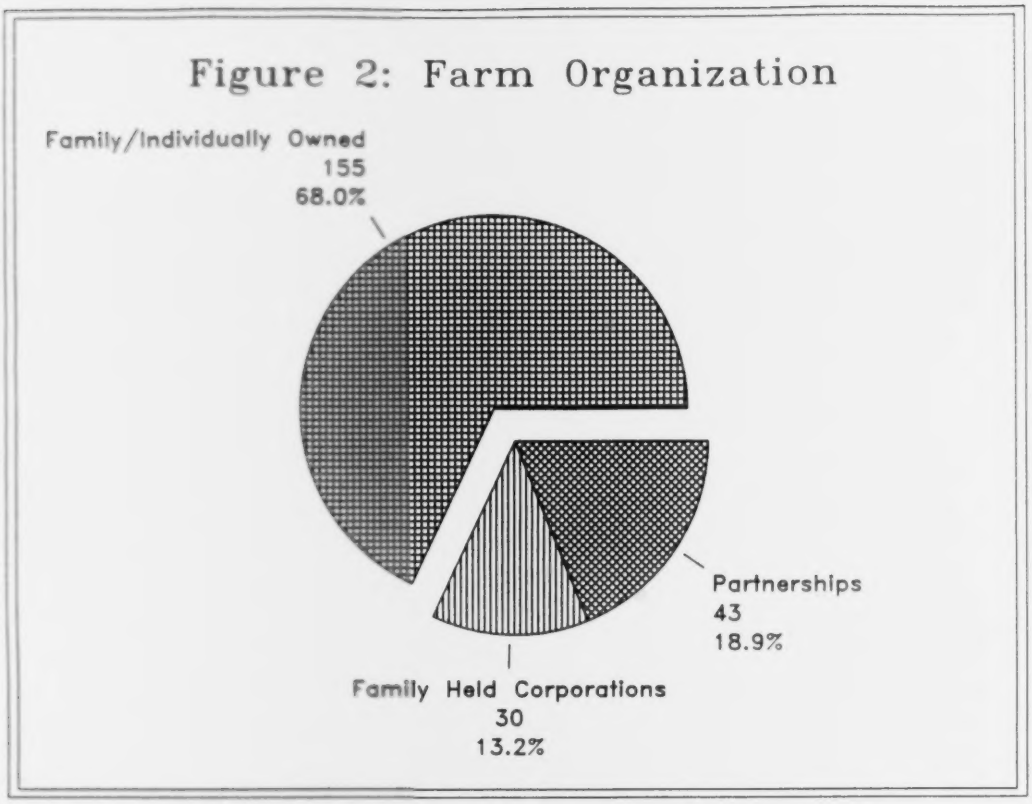
Variables	Small Farms	Medium Farms	Large Farms
Farm Residence	82	76	66
Farm Type			
Row Crops	29	47	60
Tree Crops	32	23	0
Animals	19	8	23
Hired Labor	25	43	63

A higher percentage of farm women reside on the smaller farms. As expected, larger farms tend to employ more hired labor. The larger farms were oriented toward production of row crops which tend to be mechanized in Yolo County, whereas smaller farms were oriented toward orchard crops which tend to be less mechanized. Animals were produced more on both smaller and larger farms than medium sized farms. This finding may be due to the amount of land needed for pasture to maintain a productive livestock operation and the tendency for smaller part-time operations to maintain animals for pleasure or

small scale self-sufficiency. In contrast, medium sized farms are less likely to have animals for either of these two reasons.

A little less than a quarter (24.1%) of all farms directly market their products in Yolo County (see Figure 1). Women play a major role in this area. The wife takes major responsibility for direct marketing 37% of the time. The husband performs the same role about one-quarter of the time (24.7%) and the joint sharing of this responsibility occurs about one-fifth of the time (20.4%).





About 69% of the total farmland in Yolo County is irrigated, with over 90% of all farms using irrigation to some degree. Both of these findings are higher than the Census of Agriculture figures of 75% and 47% respectively. When respondents were asked to report their primary source of water 30% reported surface water, 47% groundwater and 57% both surface and groundwater.

Organizationally, over 68% of the farms are individual or family owned, about 19% are partnerships and approximately 13% are family held corporations (see Figure 2). The amount of land leased from others varies from 0 to 7,000 acres. An average of 63 acres are leased to other persons. Respondents estimated that on average, 38% of farm labor is performed by hired labor taking into account both peak season work and year-round work. Over 60% reported hiring custom work.

With regard to gross farm income, 11% of our respondents reported earnings of over $250,000, 14% reported earnings between $100,000 and $249,999, 12% reported earnings between $50,000 to $99,999, 17% reported earnings between $25,000 and $49,999 and 47% earned under $25,000 (see Figure 3).

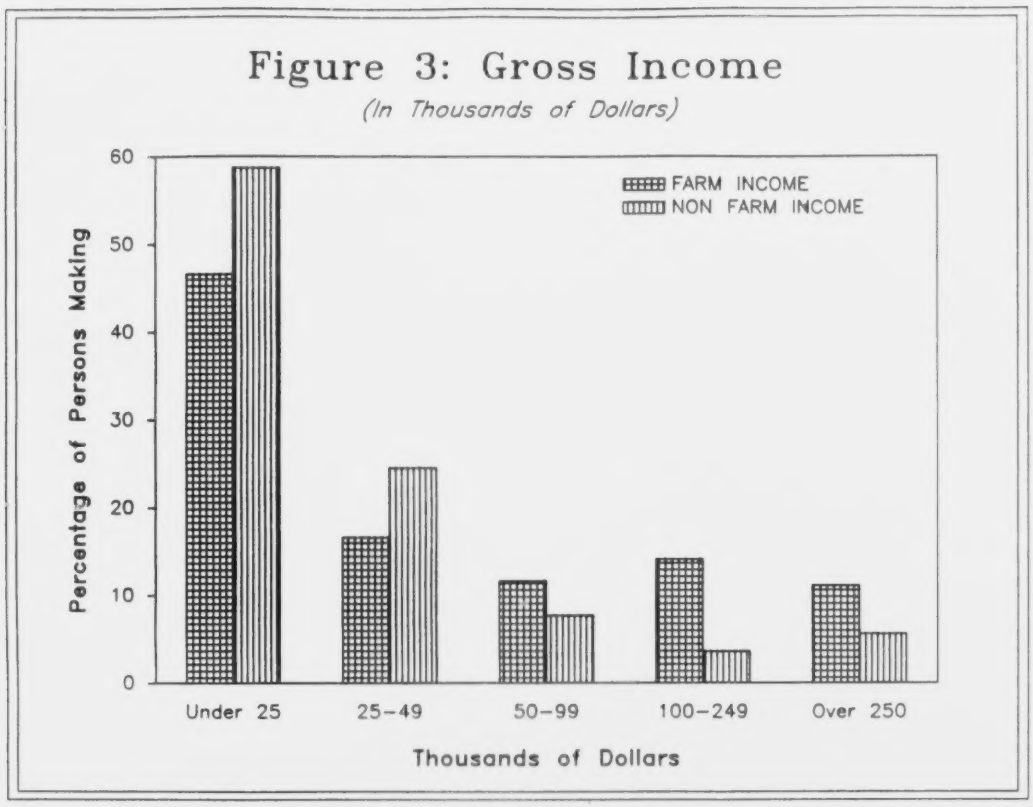
Farming is increasingly becoming a part time operation. Frequently small farmers need to hold outside jobs in order to remain in farming. Also larger farmers may diversify by investing in sectors outside of agriculture. Thus, in regard to gross income derived from outside sources, 5.6% of the respondents reported earnings of over $250,000; 3.6% reported earings between $100,000 and $299,999; 7.7% reported earnings between $50,000 and $99,999; 24.5% reported earings between $25,000 and $39,999; and 58.7% reported earnings under $25,000.

While slightly over half of the respondents reported agriculture (crops and livestock including poultry) to be the principal source of income, over one-third said outside employment was the principal source of income (see Table 3). This finding bears out the importance of outside employment as a source of capital in agriculture today, and supports the notion of the importance of farm women's contribution in the form of off-farm employment.

Table 3

Income Sources Ranked (Percentage)

Source	First	Second	Third	None
Crops	46.0	21.5	3.0	29.5
Outside employment	33.4	20.4	2.4	43.7
Livestock/poultry	7.7	10.6	4.4	77.3
Social Security/Retirement funds	3.7	5.9	2.7	87.7

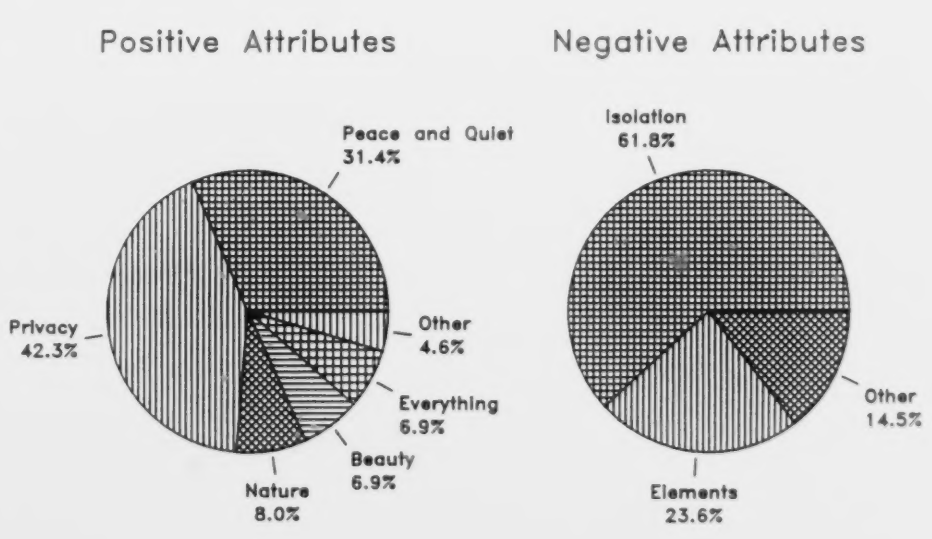


Household Characteristics

Over 76% of the women surveyed live on the farm, but only 54% consider themselves either farmers or ranchers. Over 48% were born on a farm or ranch. Those born on ranches were more likely to consider themselves either as farmers or ranchers in contrast to those who were not born on a farm or ranch.

When asked if they liked living in a rural area, over three-fourths responded positively (76.3%). The most common reason given was privacy (42%) followed by peace and quiet (32%). Less than 50% (48.2%) of the respondents were able to suggest one or more reasons why they disliked living in a rural area. By far the most common disadvantage given was isolation (61.8%). Figure 4 shows the respondents principal likes and dislikes of living in rural areas in detail.

Figure 4: Attitudes Towards Rural Living

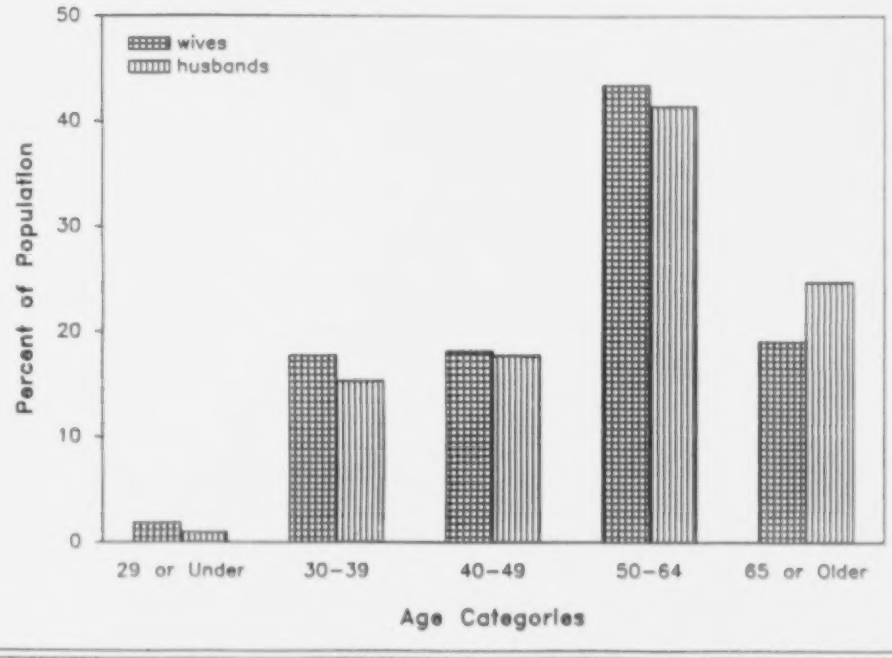


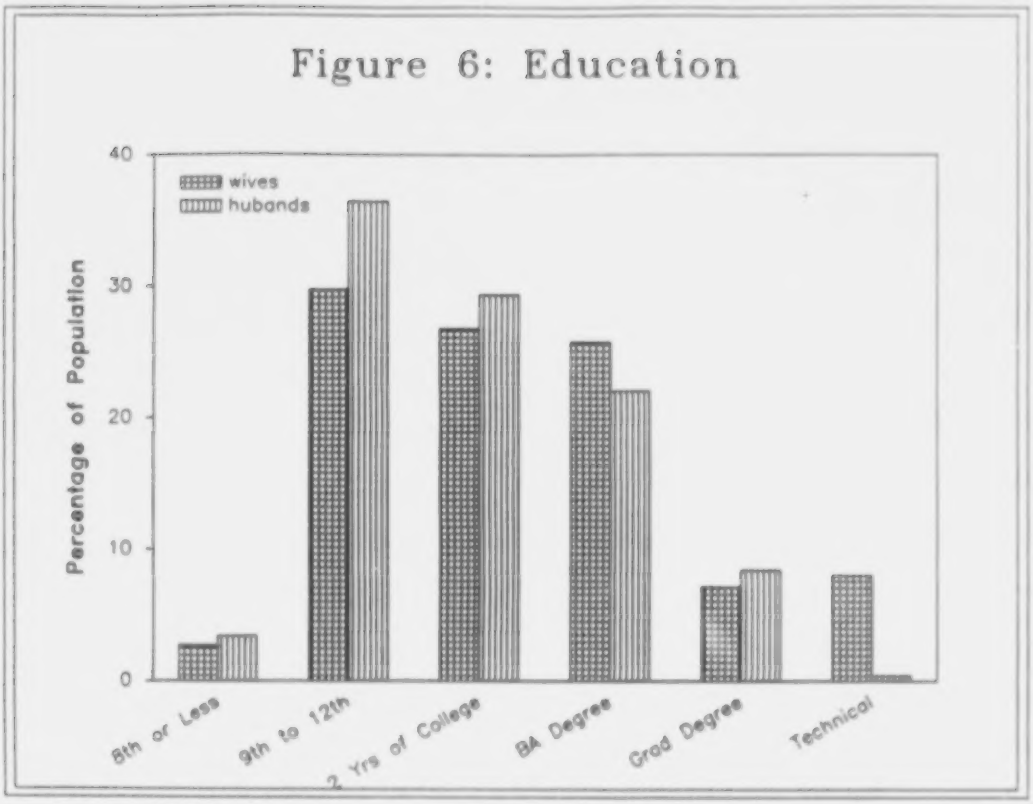
The vast majority (94.1%) of women interviewed were married. There was a range of 0 to 33 households living on the farm with a mean of 2.2 households per farm. On average, 2.7 persons live in each interviewee's household with 1.2 of the household members engaged in full-time farming.

Over 43% of the respondents are between the ages of 50 and 64 with 19% over 65; 18% between 40 and 49; 18% between 30 and 39; and only 2% less than 29. Husbands tended to be slightly older than their wives (see Figure 5).

Over a quarter of the respondents have a college degree and about 55% had completed at least two years of college. Slightly less than a third of the husbands have a college degree while about 29% had completed two years of college without completing a four-year degree (see Figure 6). The only other noticeable difference between the educational background of men and women is

Figure 5: Age





that 8% of the women went to technical school while less than 1% of the men did. This is perhaps due to the prevalence of women entering vocational careers.

While only 20% of the husbands are employed in jobs other than farming, one-third of the women are employed in outside jobs. This finding substantiates references in the literature to the important role of farm women in (Barlett 1983) supplementing the income of many farms that might not otherwise survive. As previously mentioned, 46% of the farms have gross incomes of under $25,000. One woman interviewed stated: ". . . .You'd better have a job in town unless you're retired. It's almost impossible to be solely into farming." Of the female respondents working, over one-third (35.5%)

worked more than 38 hours a week, and another one-third (35.5%) worked less than 20 hours per week. The remainder (28.9%) worked from 21 to 38 hours per week.

As expected, age was a significant factor in explaining whether or not farm women worked outside jobs (see Table 4). Women less than 49 years of age were more likely to work than either women between 49 and 64 years of age or women over 65 years of age. Furthermore, they were more likely to work longer hours. Women over 65 were the least likely to work.

Table 4

Hours Per Week Worked on Outside Job and Age of Respondent

Job Hours	Age of Respondents			
	Less than 49 years	49-64 years	65 or older	Total
No Job	31.5 (43)	67.0 (64)	90.4 (39)	65.5 (146)
Less than 20 hours	17.3 (14)	10.0 (10)	5.6 (2)	11.9 (26)
20 to 38 hours	10.0 (8)	14.0 (13)	1.6 (1)	10.1 (22)
Over 38 hours	21.2 (18)	9.1 (9)	2.4 (1)	12.3 (27)
Total	37.7 (83)	43.1 (96)	19.2 (43)	100.0 (222)

Chi-square = 24.251
Significance = 0.661

However, those living on farms tended to have less opportunity to work outside jobs. Table 5 illustrates that those living off-farm work more outside jobs proportionately. Thus, while it may be an important function of the wife to help maintain marginal farm operations through outside employment, it is probably easier for those living away from the farm to do so.

Table 5

Hours Per Week Worked on Outside Job
and Whether or Not Respondent Currently Lives on Farm

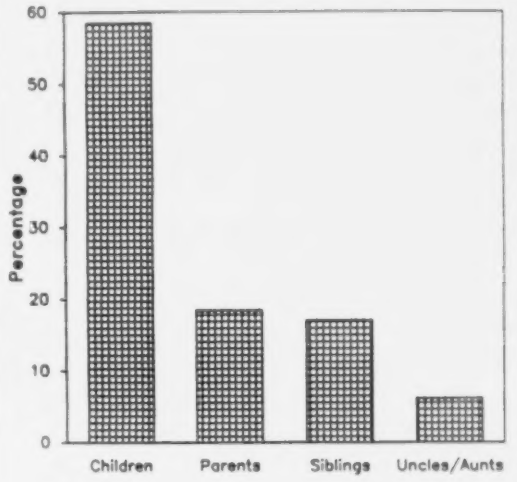
Lives on Farm	Job Hours				
	No Job	Less than 20 hours	20 to 38 hours	Over 38 hours	Total
No	51.3 (27)	16.0 (9)	11.6 (6)	21.1 (11)	23.7 (53)
Yes	70.0 (120)	11.1 (19)	9.5 (16)	9.4 (16)	76.3 (171)
Total	65.6 (147)	12.2 (27)	10.0 (22)	12.2 (27)	100.0 (224)

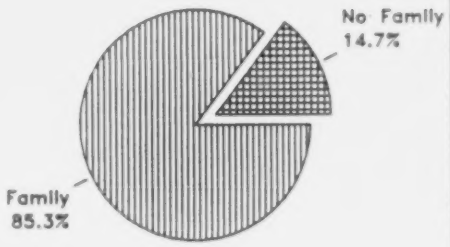
Chi-square = 7.675
Significance = 0.053

This study also replicates the findings of other studies with respect to the continuing importance of the extended family in agriculture. About 85% of the women interviewed indicated that they have extended family members living within a 30 mile radius. Children or grandchildren comprise almost 60% of this group. Over 18% had parents living while 17% had either brothers or sisters within this distance (see Figure 7). Less than 15% had no family within 30 miles.

Figure 7: Family Members Within Thirty Miles

Yolo County, California





The presence of family members explains the fact that extended family members are involved with over one-half (51%) of all the farming operations in Yolo County. When comparing involvement of extended family members with farm size, the prevalence of family labor increases with farm size, a finding that contradicts some of the literature (Donaldson 1973).

Farms with higher gross incomes tend to involve extended family members to a greater degree (see Table 6). This finding is reasonable given the fact that there would be less opportunity to employ relatives in smaller, less profitable farm operations. The impact of size of farm operation will be examined more extensively later in this monograph.

Table 6

Farm Income and Involvement of Extended Family with Farm Operation
(Percentages)

Involvement of Extended Family	Under 25,000	$25,000 to $100,000	Over $100,000	Total
Yes	37.2 (29)	56.7 (23)	70.1 (28)	50.4 (81)
No	62.8 (50)	43.3 (18)	29.9 (12)	49.6 (80)
Total	49.3 (79)	25.7 (41)	25.0 (40)	100.0 (161)

Chi-square = 12.415
Significance = 0.002
Tau c = -0.295
Gamma = -0.451
Eta = 0.278 (with involvement of extended family dependent)
Lambda = 0.255 (with involvement of extended family dependent)
r^2 = -0.277

Almost 83% of the women interviewed said they received no outside help with housework. A little less than one-third of those with children indicated that their children regularly helped with housework. On the other hand, 57% of those with children indicated that their offspring regularly help with farmwork.

Figure 8 shows a breakdown by sex and age of the children in the farm household. The important role of children as a source of farm labor could account for the fact that 13% had sons over 18 living with them while only 4% had daughters over 18 at home. This is probably due to the greater likelihood that an older son(s) is likely to run the farm eventually, or is currently

performing critical functions necessary to the maintenance of the farm operation.

Figure 8 also shows that while there are slightly more daughters than sons under age six, the reverse is true between seven and 18 years of age. However, it is only from age 18 on that the ratio of male to female offspring dramatically differs.

Household Consumption

Over three-fourths of the respondents (77.3%) have gardens or orchards and slightly less than one-half (45.9%) own livestock or poultry. Almost three-fourths (74.8%) of those with gardens or orchards make use of them for household consumption while over one-third (37.4%) of those having animals or poultry use them for home consumption.

Over 67% preserve their own food through canning, freezing or drying. Freezing tends to be the most popular mode of food preservation followed by canning and drying. Figure 9 gives a more detailed breakdown of home self-sufficiency.

ACTIVITIES AND ORGANIZATIONAL INVOLVEMENT

Organizational Participation

Respondents reported little involvement with agricultural associations. The Farm Bureau was the association most frequently mentioned (31%); 28% reported belonging to one agricultural organization; 14% belonged to two; only 3% belonged to three or more. Over one-half (55%) stated that they did not belong to any agricultural association. Husbands are usually responsible for

Figure 8: Children in the Household

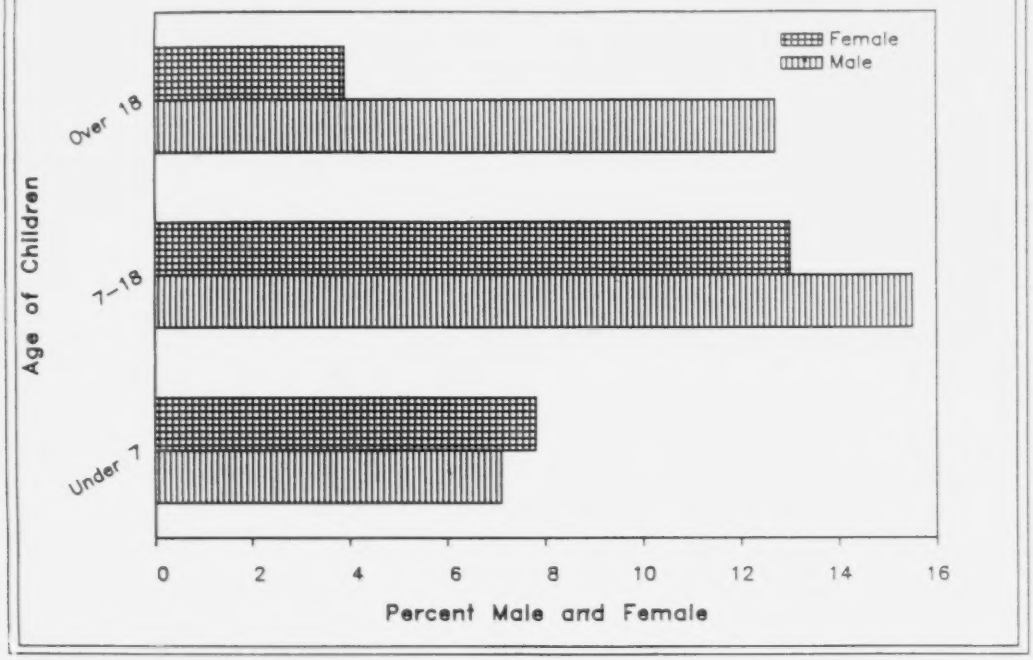
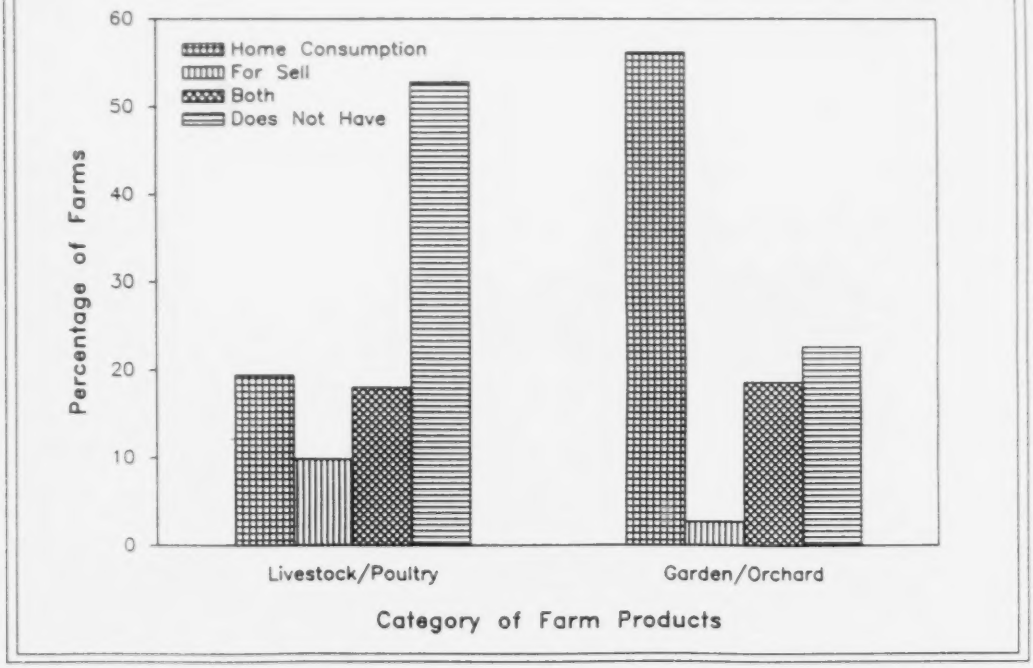


Figure 9: Use of Products Grown on Farm



attending agricultural meetings in slightly over one-half of the cases (51.6%) while in about one-quarter (24.8%) of the cases the wife is responsible or shares equally with her spouse in this activity. When asked if they used any Cooperation Extension Services, 68% said yes. Over 81% reported using other types of off-farm services as well.

Civic or voluntary organizations are important to farmers, with over one-half (55%) of the respondents belonging to them. Approximately one-third (30%) belonged to one; 17% to two, and 8% to three or more. The most common organizational membership reported was religious groups (27%); civic associations (15%); PTA and other school organizations (12%); and voluntary hospital or health associations (8%).

Both education and age signficantly impact on the organizational participation of farmers. For example, in Table 7 the relationship between educational level and the number of civic and volunteer associations the participant is involved with is shown. Higher levels of education were significantly associated with membership.[2] Almost 60% (58.9%) of those with a high school education or less did not belong to civic or volunteer associations. In contrast, less than one-third (32.6%) of those with a college degree were similarly uninvolved. The statistics in the cross-tab shown in Table 6 support this conclusion. A similar relationship, although not quite as strong, is shown in Table 8 which shows the relationship between education and involvement in agricultural associations.

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[2]The statistics were chosen depending upon the level of measurement. Also, probability or proportional reduction of error statistics were used when appropriate since they are more directly interpretable because their values have a direct intuitive meaning.

Table 7

Educational Level and Number of Civic and Volunteer Associations Involved With (Percentages)

Number of Associations	High School or Less	2 yrs. College or Trade School	4 yrs. College or More	Total
None	42.1 58.9 (44)	34.4 45.0 (36)	23.5 32.6 (24)	32.4 (74)
One	30.8 28.5 (21)	26.4 22.8 (18)	42.7 39.0 (29)	34.7 (79)
More than One	16.5 12.5 (9)	42.7 39.0 (29)	38.0 28.4 (21)	32.9 (75)
Total	32.4 (74)	30.0 (68)	24.6 (56)	100.0 (228)

Chi-square = 15.866
Significance = 0.003
Tau b = 0.188
Gamma = 0.282
r^2 = 0.210

Table 8

Level of Education and Number of Agricultural Association Involved With (Percentages)

	Level of Education			
Number of Ag Associations	High School or Less	2 yrs. College or Trade School	4 yrs. or More College	Total
None	36.5 62.7 (46)	34.6 55.4 (44)	28.9 48.9 (37)	55.6 (127)
One	36.8 32.0 (24)	30.1 24.5 (19)	33.1 28.4 (21)	28.2 (64)
More than One	10.7 5.3 (4)	43.3 20.1 (16)	46.1 22.6 (17)	16.1 (37)
Total	32.4 (74)	34.7 (79)	32.9 (75)	100.0 (228)

Chi-square = 10.141
Significance = 0.038
Tau c = 0.125
Gamma = 0.213
Eta = 0.172 (with number of ag associations dependent)
r^2 = 0.167

Age appears to be inversely related to involvement in associations as shown in Table 9. While over 35% of the respondents less than 49 years of age belong to more than one civic or volunteer association, less than 19% of those age 64 or older belong to more than one. Conversely, about 56% of those 65 or older belong to no associations while less than one-third (29.4%) of those less than 49 years of age belong to no civic or volunteer associations. The statistical significance of this relationship was high as shown in the cross-tab in Table 9.

Table 9

Age of Respondent and Number of Civic Volunteer Associations Involved With (Percentagtes)

Number of Associations	Less Than 49 Years	49 to 64 Years	65 or Older	Total
None	24.8 29.4 (25)	51.5 53.0 (52)	23.7 55.8 (24)	44.7 (101)
One	43.7 35.2 (30)	36.4 25.5 (25)	20.0 32.1 (14)	30.4 (68)
More than One	53.4 35.3 (30)	37.4 21.5 (21)	9.2 12.1 (5)	24.9 (56)
Total	37.7 (85)	43.4 (98)	18.9 (43)	100.0 (225)

Chi-square = 15.531
Significance = 0.004
Tau b = -0.219
Gamma = -0.337
Eta = 0.252 (with number of associations dependent)
r^2 = -0.240

While as previously reported most respondents used Cooperative Extension Services, it is useful to develop a profile of those most likely to use these services. As in the case of other associations, both education and age are

important factors (see Tables 10 and 11). Younger respondents with more education were significantly more likely to use Cooperative Extension Services. Although the relationship proved to be statistically weaker (although still significant) than those with a higher farm income, they were also more likely to use Cooperative Extension Services than those with less farm income (see Table 12).

Table 10

Education and Use of Cooperative Extension (Percentages)

	Education of Respondent			
Cooperative Extension	High School or Less	2 Years of College	4 Years or More of College	Total
Yes	27.3 57.1 (40)	31.4 63.4 (46)	41.2 83.1 (60)	 68.0 (145)
No	43.6 42.9 (30)	38.6 36.6 (26)	17.8 16.9 (12)	 33.7 (72)
Total	32.5 (69)	33.7 (72)	33.7 (72)	100.0 (213)

Chi-square = 12.011
Significance = 0.003
Tau c = -.231
Gamma = -.388
Eta = .237 (with Cooperative Extension dependent)
r^2 = -.228

Table 11

Age and Use of Cooperative Extension Services (Percentages)

Cooperative Extension	Less Than 50 Years	50 to 64 Years	65 or More	Total
Yes	39.9 70.9 (57)	47.6 75.2 (68)	12.5 45.0 (18)	67.9 (142)
No	34.5 29.1 (23)	33.2 24.8 (22)	32.3 55.0 (22)	32.1 (67)
Total	38.1 (80)	43.0 (90)	18.9 (40)	100.0 (210)

Chi-square = 12.069
Significance = 0.002
Tau c = 0.144
Gamma = 0.249
Eta = .240 (with Cooperative Extension dependent)
r^2 = .160

Table 12

Farm Income and Use of Cooperative Extension Services (Percentages)

	Gross Farm Income			
Cooperative Extension	Under $25,000	$25,000 to $100,000	Over $100,000	Total
Yes	39.4 56.5 (47)	33.2 76.7 (40)	27.5 78.5 (33)	67.6 (120)
No	63.3 43.5 (36)	21.0 23.3 (12)	15.7 21.5 (9)	32.4 (58)
Total	47.1 (84)	29.2 (52)	23.6 (42)	100.0 (178)

Chi-square = 8.971
Significance = 0.011
Tau c = -0.215
Eta = -0.384 (with Cooperative Extension dependent)
r^2 = -0.207

Recreational Activities

When asked to list their recreational activities the female respondents listed from 0 to 7 types. About 70% mentioned between 1 to 4 activities.

The popularity of items mentioned is shown in Table 13. The top four activities reported were travel (36.5%), sports or exercise (35%), outdoor activities such as camping or fishing (32.7%) and reading (30.3%).

Table 13

Recreational Activities (Percentages)

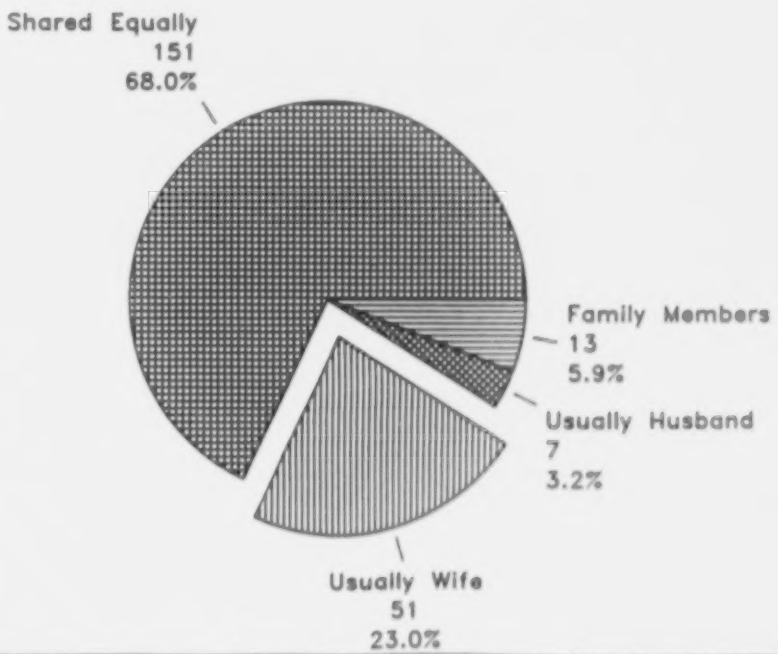
Type	Percent	Number
Travel	36.5	83
Sports/exercise	35.0	80
Outdoor activities	32.7	75
Reading	30.3	69
Visiting relatives and friends	23.9	54
Knitting	17.6	40
Gardening	17.5	40
Out to Dinner	16.6	38
Sewing	16.3	37
Television	16.1	37
Playing card/Games	10.7	24
Volunteer/Church Work	10.7	24
Cultural Activities	5.5	13
Other Activities	21.7	49

Relatively few persons mentioned cultural activities (5.5%), playing cards/or games (10.7%) or volunteer work (10.7%). The relative small proportion of

respondents who mentioned television (16.1%) may reflect not so much that few watch television, as it may indicate the fact that TV has become so much a part of American life that we do not consciously consider it recreation. For increased validity it is recommended in future surveys that a question with a closed-ended format be used in place of the open-ended one used in this pilot study.

Figure 10 shows the division of labor over decisions regarding recreational and social activities. Note that in most cases they are shared equally between spouses (68.1%). Respondents were almost eight times more likely to report themselves, as opposed to their husbands, as being the person who makes this decision when a single individual is responsible. Only seven persons (3.0%) reported that the husband generally makes this decision. As elaborated in the next section, and despite the importance of the role of

Figure 10: Who Decides Recreational and Social Activities?



women in most aspects of farming, a clearly defined divison of labor exists on most farms today.

INVOLVEMENT OF WOMEN IN FARMING

Decision-Making

Farm decision-making has been the only aspect of female involvement on farms that has generated a large body of research literature (Downie and Gladwin 1981; Ehlers 1983; Gasson 1981; Hill 1981; Salaman and Keim 1979; Smith 1979; Sweet 1972; Waters and Geisler 1982; Wilkening and Morrison 1963; Wilkening and Bharadwaj 1967). According to the 1982 Census of Agriculture, 9% of the farms in California are run by women. In Yolo County, less than 6% of the farm operators are female. As suggested at the beginning of this paper, this is not a true indication of the actual number of women involved in major farm decision-making.

In order to get a more accurate picture of how women perceive their roles in agriculture, 22 questions were asked about decision-making and the division of labor. The questions covered four general areas: production decision-making, production tasks, management support services and homemaking. All but the last one are directly related to the farm enterprise (see Table 14).

Production decision-making taps the dimension of decisions inherent in farm operation, crops to plant, supervision and hiring of labor, farm size, size of the animal operation, equipment, purchases and agricultural credit. In these tasks husbands tend to dominate with few wives taking principal responsibility. However, in many cases there is shared responsibility as indicated in Figure 11 which illustrates control of divisions of labor in planting crops and purchasing major farm equipment.

Table 14

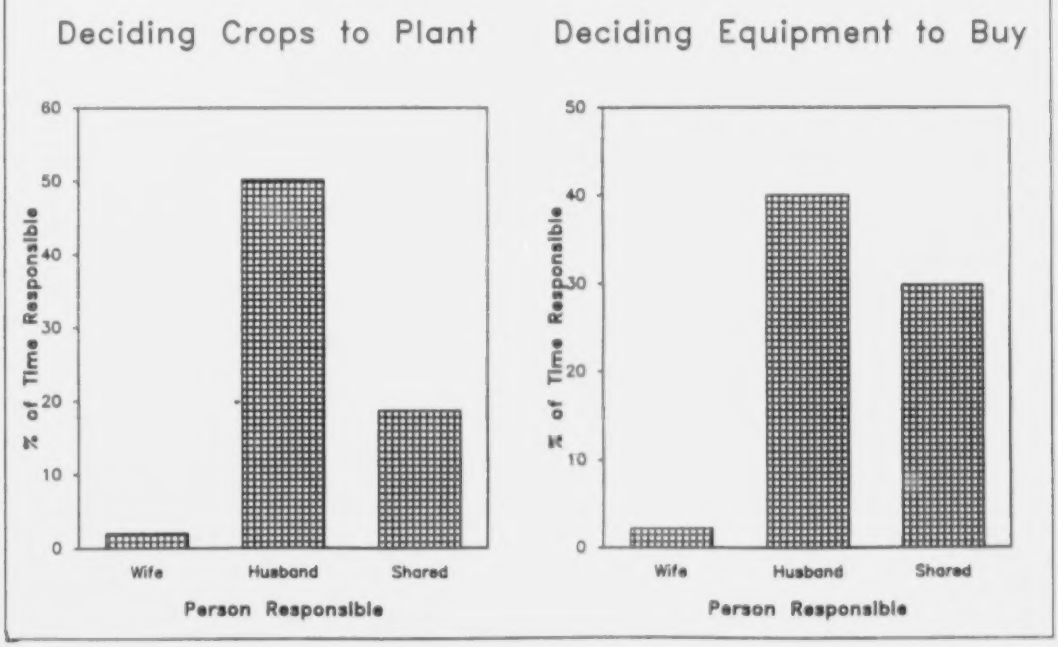
Relative Involvement in Farming and Homemaking

Item	Husband Exclusively	Wife Exclusively	Shared Equally	Other Household Member	Service Purchased	Combination (often includes Husband & Wife)	Estimated Participation of Wife
Production Decision-Making							
Deciding crops to plant	50.2 (86)	2.0 (3)	18.7 (32)	3.4 (6)	6.6 (11)	19.2 (33)	24.7 (41.8)
Labor supervision and hiring	48.5 (87)	1.9 (3)	9.3 (17)	5.0 (9)	10.5 (19)	24.8 (44)	14.0 (24.9)
Deciding size of farm operation	31.1 (70)	5.3 (12)	44.4 (99)	2.7 (6)	0	16.5 (37)	57.9 (129.5)
Deciding size of animal operation	31.9 (31)	15.2 (15)	36.7 (35)	3.6 (3)	0	12.6 (12)	58.4 (56.2)
Purchasing major farm equipment	40.0 (81)	2.2 (4)	29.8 (60)	2.5 (5)	2.2 (4)	23.3 (47)	39.5 (79.0)
Obtaining agricultural credit	41.9 (73)	4.1 (7)	32.4 (57)	2.9 (5)	0.6 (1)	17.9 (31)	43.0 (75.5)
Production Tasks							
Cultivating	56.0 (111)	1.6 (4)	2.9 (6)	2.9 (6)	15.2 (30)	21.2 (42)	5.6 (11.9)
Irrigating	37.4 (71)	2.3 (4)	6.2 (12)	4.7 (9)	28.0 (53)	21.4 (41)	10.3 (19.5)
Hand Fieldwork	32.3 (63)	3.7 (7)	4.1 (8)	2.5 (5)	36.6 (71)	20.9 (40)	9.4 (18.2)
Harvesting	24.5 (49)	1.5 (3)	7.1 (14)	2.8 (6)	30.4 (61)	33.7 (68)	11.5 (23.1)

Table 14, continued

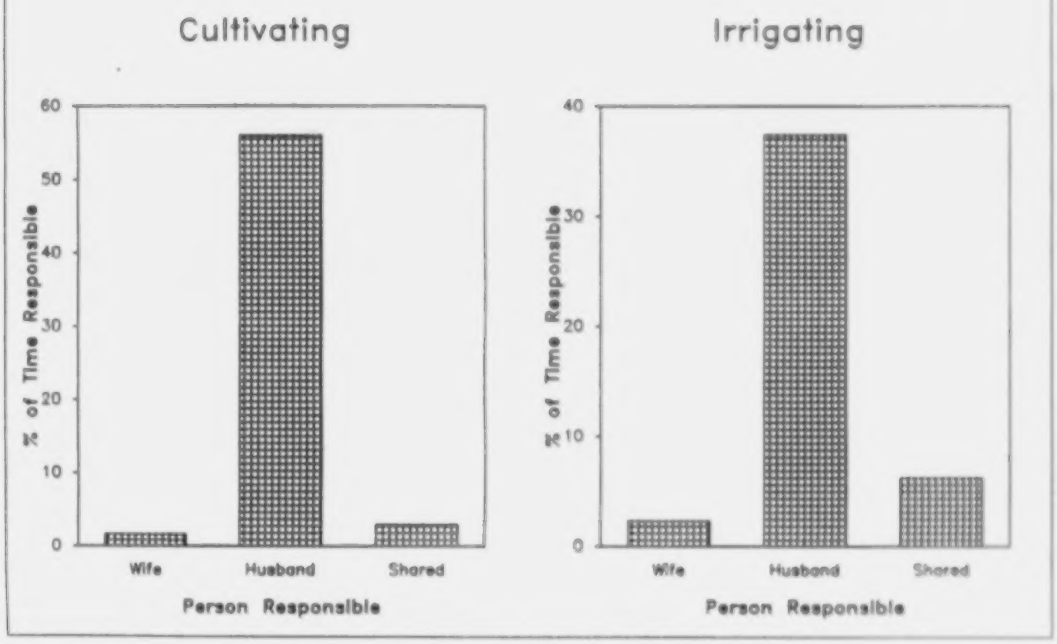
Item	Husband Exclusively	Wife Exclusively	Shared Equally	Other Household Member	Service Purchased	Combination (often includes Husband & Wife)	Estimated Participation of Wife
Management Support Services							
Running farm errands	27.5 (60)	14.5 (32)	26.4 (58)	2.6 (6)	5.4 (12)	23.5 (52)	50.8 (111.8)
Obtaining information from agencies	51.2 (10.5)	11.5 (23)	14.4 (28)	5.1 (10)	3.7 (7)	14.1 (28)	29.6 (58.3)
Reading publications and checking prices	37.9 (80)	12.3 (26)	24.4 (51)	4.5 (10)	3.3 (1)	17.5 (37)	43.1 (90.7)
Attending agricultural meetings	51.6 (95)	5.2 (10)	19.6 (36)	5.2 (10)	0.6 (1)	17.9 (33)	29.2 (50.5)
Bookkeeping and scheduling	23.6 (52)	44.0 (96)	8.6 (19)	5.4 (12)	10.2 (22)	8.3 (18)	57.0 (124.5)
Homemaking							
Yard care	9.5 (21)	47.6 (106)	22.3 (50)	2.7 (6)	6.1 (14)	11.7 (26)	78.1 (174.2)
Meal preparation	0.6 (1)	91.7 (209)	3.7 (9)	0	0	4.2 (9)	99.4 (226.6)
Planning recreation and social activities	3.1 (7)	23.1 (51)	68.1 (151)	0	0	5.7 (13)	96.4 (213.9)
Child care	1.0 (1)	71.0 (52)	22.0 (16)	0	1.0 (1)	5.1 (4)	97.7 (71.7)

Figure 11: Production Decision Making



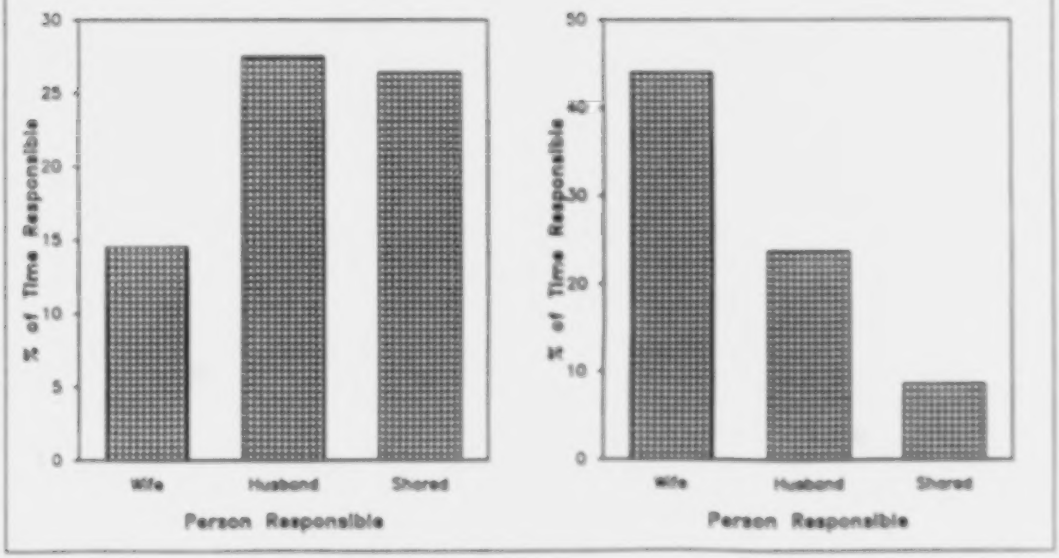
Farming activities are most sex differentiated in the areas of production tasks that center around the physical labor of farming, such as cultivating, irrigating, hand fieldwork and harvesting. Here one finds that few wives share responsibility and even fewer take principal responsibility for production tasks. Figure 12 illustrates two examples of this.

Figure 12: Production Tasks



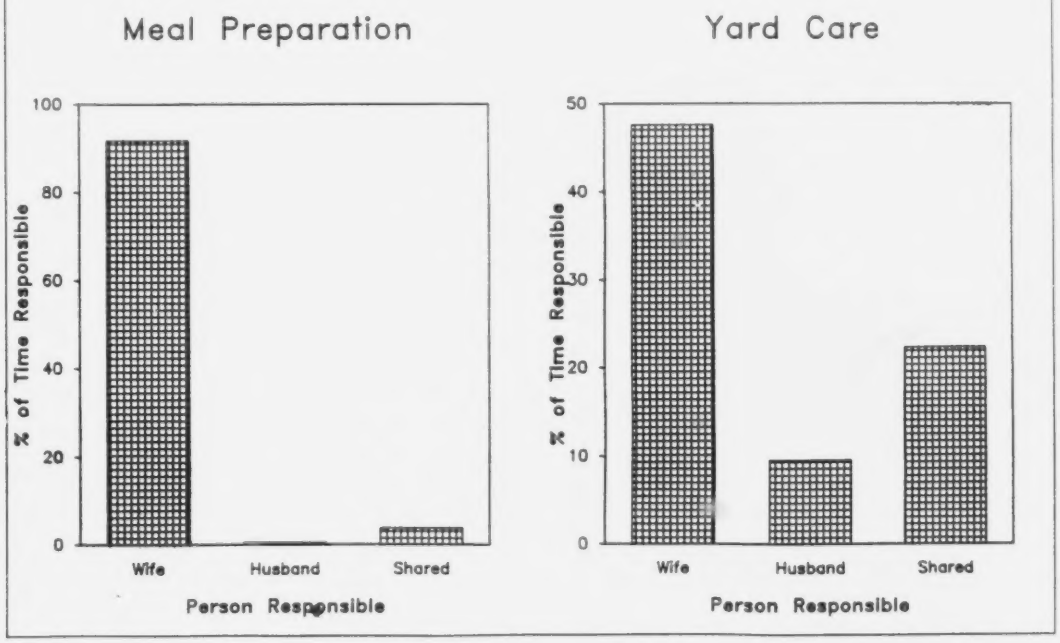
The third dimension--management support services, consists of running farm errands, obtaining information from extension and commodity agencies, reading agricultural publications and market prices, attending agricultural meetings, bookkeeping and scheduling. In these activities wives frequently play a crucial and at times dominant role. Figure 13 shows "running farm errands" in which only slightly over one-fourth of the husbands take principal control, and "bookkeeping and scheduling" in which the participation of wives significantly exceeds that of their spouses.

Figure 13: Management Support Services



The fourth set of items--homemaking, consists of yard care, meal preparation, care of children, and decisions about recreation and social activities. As expected men tend to seldom take exclusive responsibility for these tasks. Wives tended to be principally responsible for most homemaking activities. The examples of "meal preparation" and "yard care" are shown in Figure 14.

Figure 14: Homemaking Tasks



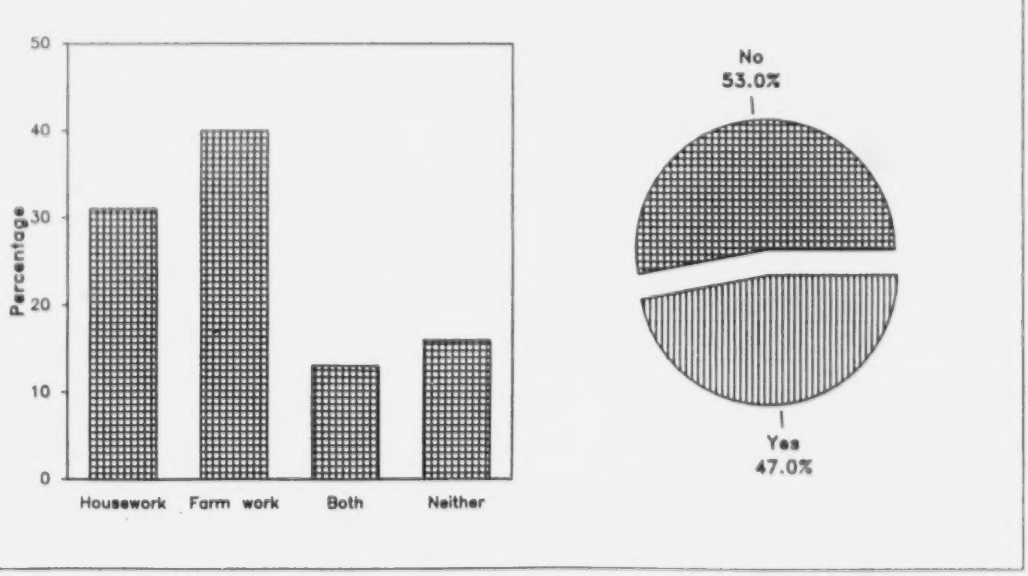
For each area of involvement, a score of 2 was assigned to each response if the woman was the main person involved, a score of 1 was assigned if both man and woman were involved. All other responses received a score of 0. Perfect scores of 12, 10, 8 and 6 for production decisions, management services, task participation and homemaking respectively would indicate that women had almost exclusive responsibility in these areas. The grand composite index representing overall farm involvement could have a high score of 30. When converted to percentages, the scores represent the degree of responsibility carried by the woman.

Women actively participate in both production decision-making and management support services. More than 50% of the wives in 4 of the 11 areas were, by conservative estimates, involved in these two categories, and over 40% in six of the 11 categories. Only in the area of actually carrying out the physical tasks of farming is there relatively low involvement by women.

This suggests that previous research may be amiss in dichotomizing farm decision-making by sex. It may be more accurate to focus on the farm household as a holistic unit in which women are an integral part of shared participation in farming. This is reflected in Table 14 by the differences between the columns in which the wife is exclusively responsible for an item and the column in which the total participation of the wife was estimated.

Apart from agricultural involvement, the role of women in farming through the maintenance of the farm household is often overlooked. This

Figure 15: Work Preferred



responsibility is most strongly felt regarding meal preparation (92%) and child care (71%). When asked about potential changes in the role of farm women over the next 10 years, 23% saw women being less involved overall in farming while over 45% saw women becoming more involved in management aspects of farming.

Despite these sentiments, over one-half of the women interviewed (53%) seemed content or at least accepting of their current role (see Figure 15). They did not wish to change the division of labor. This lends support to the concept of the farm household existing as a cooperative, homogeneous unit. When asked to identify types of work preferred, 31% indicated household work, 40% farmwork, 13% said they liked both and 16% stated that they did not like either.

Table 15

Age of Respondent and Desire to
Change Household Division of Labor (Percentages)

	Age of Respondent			
Desire for Change	Less Than 49 Years	50 to 65 Years	65 Years or Older	Total
Yes	55.6 70.1 (59)	34.4 37.7 (37)	10.0 25.2 (11)	 47.6 (107)
No	21.5 29.9 (25)	51.5 62.3 (61)	27.0 74.8 (32)	 52.4 (118)
Total	37.7 (85)	43.4 (98)	18.9 (43)	100.0 (225)

Chi-square = 29.734
Significance = 0.000
Tau c = 0.382
Gamma = 0.566
Eta = 0.364 (with desire for change dependent)
Lambda = 0.319 (with desire for change dependent)
r^2 = 0.35

The desire for change is related both to age and education. As shown in Table 15, younger women are more likely to want to change the division of labor in the household. The latter changes might imply only a little more help from their husbands in carrying out household chores or a more dramatic change in the types of tasks for which the farm woman is responsible.

Age also seems to affect the total number of changes in the division of labor desired (see Table 16). Thus, while 73% of those less than 50 years of age suggested two or more role changes, less than 21% of those between 50 and 63 years of age and only about 6% of those 65 or older mentioned the desire for a similar number of changes.

Table 16

Age and Total Number of Changes
in Division of Labor Desired (Percentages)

	Age of Respondent			
Number of Changes Desired	Less Than 50	50 to 64	65 or More	Total
0	23.6 27.6 (23)	48.8 48.2 (48)	28.2 65.3 (28)	 44.0 (99)
1	45.0 58.1 (49)	42.4 47.6 (46)	12.6 32.3 (14)	48.7 48.7 (110)
2 or More	73.0 14.3 (12)	20.9 3.5 (3)	6.1 2.4 (1)	 7.4 (17)
Total	37.7 (85)	43.4 (98)	18.9 (43)	100.0 (225)

Chi-square = 22.931
Significance = 0.0001
Tau b = -0.285
Gamma = -0.465
r^2 = -0.307

Education also effects the farm woman's perception of her role. As shown in Table 17 those women without a college education were more likely to accept the current division of labor than those who had more education. A significant difference existed between those who studied agriculture in college and those who did not. Those who studied agriculture (71.6%) were much more likely to wish a change in the division of labor than those who studied in other areas (46.7%). Those with no college experience were even less likely (41.7%) to desire a change in the tasks they carry out. This suggests that farm women whose eductional background enables them to understand farming better are less likely to be satisfied in the more "traditional" role of a wife as soley a "homemaker."

Table 17

Respondents Educational Study Area and
Desire to Change Household Division of Labor (Percentages)

	Educational Study Area			
Desire for Change	No College	Study Agriculture	Did Not Study Agriculture	Total
Yes	43.4 41.7 (47)	19.8 71.6 (22)	36.7 46.7 (40)	47.5 (108)
No	55.0 58.3 (66)	7.1 28.4 (9)	37.9 53.3 (45)	52.5 (120)
Total	49.5 (113)	13.2 (30)	37.4 (85)	100.0 (228)

Chi-square = 8.549
Significance = 0.014
Lambda = 0.120 (with desire for change dependent)
Eta = 0.194 (with desire for change dependent)

Communality and the Construction of Indices of Female Farming Involvement

Factor analysis was used as a tool for testing the expected clustering of variables. The 19 variables indicating involvement were factored using unrotated principle components analysis (see Table 18). The first factor with an eigenvalue of 5.61 explained 29.5% of the variance. This first factor clearly represents high involvement in farm activities as opposed to homemaking activities.

The second factor focuses on involvement in "task" centered activities that require a high input of physical labor. This dimension is negatively related to obtaining agricultural credit and purchasing major farm equipment. This may result from the fact that farms where women engage in physical labor tend to be smaller. The use of the wife as a source of labor on such farms will be discussed in detail later in this monograph. As previous studies have shown (Jones and Rosenfeld 1981), women actively involved in farm tasks are also more involved in decision-making. But the reverse is not necessarily true. Thus, farm women may be involved in other aspects of farming without carrying out physical production tasks. This is reflected in both the first and second dimension of Table 18.

The third factor taps the dimension which represents women whose lives center on homemaking responsiblities as opposed to farming. Furthermore, the type of women this factor represents tend not to have children living at home. The "empty nest syndrome" may partially account for their exceptionally strong emphasis on homemaking activities. Consequently, the need for compensation for the loss of children at home could lead to a situation where wives not involved in farming activities increase their homemaking activities.

Table 18

Principle Components of Decision-Making

Measures	1 Farm Involvement	2 Physical Tasks	3 Home-making Without Children	4 Small/ Intensive Without Children	5 Intensive Operation Without	Community
Decide crops to plant	.618	.058	-.101	.172	.321	.528
Labor hiring & supervision	.593	.123	-.105	-.449	-.096	.589
Decide size of farm operation	.640	-.181	.085	-.093	-.166	.486
Decide size of animal operation	.606	-.082	-.021	.081	-.143	.401
Purchase major farm equipment	.709	-.230	-.082	-.047	-.180	.597
Obtaining ag credit	.570	-.495	-.023	-.099	-.032	.582
Cultivating	.595	.541	-.030	.129	-.084	.671
Irrigating	.539	.475	-.059	.334	.254	.696
Hand fieldwork	.596	.523	.032	-.170	-.135	.677
Harvesting	.486	.505	-.041	-.190	.127	.545
Running farm errands	.597	-.236	-.012	.208	.374	.596
Obtaning agency information	.643	-.224	-.045	.075	-.163	.497
Read publications & check prices	.693	-.214	.110	.029	-.097	.548
Attending ag meetings	.693	-.078	.136	-.117	-.167	.556
Bookkeeping & scheduling	.482	-.286	-.009	-.038	.530	.596
Yard care	.179	-.016	.660	-.023	.119	.482
Meal preparation	-.093	.052	.731	.021	.259	.613
Planning social & recreational activities	.078	.065	.552	.219	-.404	.526
Child care	.125	-.042	-.142	.755	-.215	.655

The fourth factor taps those wives with children at home. This dimension also seems to reflect smaller and more recent farm operators. There would be little hiring of labor as a consequence, and the wife would do little labor supervision as a result. In California these farms would most likely be dependent upon irrigation which would explain the moderate loading on the variables.

The final factor is somewhat like the previous factor except it seems to represent farm operations without children present that may or may not be small. Women here, unlike the previous dimension, are more active in farming, not only helping in irrigation but also in deciding what crops to plant and, more importantly, doing the bookkeeping and scheduling as well as running farm errands. The latter are fairly traditional farm activities. The lack of input on recreation and social activities may be due to lack of time because of the heavy work schedule of either husband or wife.

Together the five factors explained 57% of the variance in 19 of these variables. However, as previously explained, over one-half of this (29.5%) was explained by the first factor.

Factor analysis is also useful as a measuring device through the construction of indices which in turn become new variables used in later analysis. In the latter case, composite scales were created which represent the four theoretical divisions of female involvement previously discussed.

Scales were created for each of the four separate dimensions of involvement as well as a general index of involvement. The factor score method of creating composite standardized indices by weighting was used in order to build more valid theoretical constructs as well as to reduce

measurement error (for a discussion of factor analysis, see Fruchter 1954; Nie, Bent and Hull 1975; Rummel 1970).

Production decision-making was measured by the six items shown in Table 19. These items were loaded on a single dimension using principal-components analysis which has an eigenvalue of 2.9 and explains 48.4% of the variance. The lowest factor loading was .63 and the lowest communality was .36. Similarly, standardized scales were constructed for the other dimensions of involvement.

Table 19

Principal Components Analysis of Production Decision-Making

(Unrotated; N = 228)

Production Decisions	Factor Loading	Communality	Eigenvalue	Cumulative Percent of Variance
Decide crops to plant	.598	.357	2.902	48.4
Labor hiring & supervision	.627	.393	.846	62.5
Decide size of farm operation	.728	.531	.701	74.2
Decide size of animal operation	.663	.439	.637	84.8
Purchase of major farm equipment	.812	.650	.518	93.4
Obtaining agricultural credit	.722	.521	.396	100.0

Because of the similarities among different types of participation as indicated in the factor analysis of the 19 variables, a single index reflecting the central concept of involvement was created. A standardized factor score composite measure was created from 19 items reflecting involvement (Pearson bivariate correlation coefficents) with farm and respondent characteristics. In almost twice as many instances the general measure of involvement had equal or higher coefficients than any of the other four subdivisions of involvement taken individually.

From Table 20 it is evident that women who make production decisions also tend to be involved in management support services and production tasks. Previous studies indicate that women actively involved in farm tasks are also more involved in decision-making (Rosenfeld 1981). However, there is no significant relationship between these dimensions of decision-making and the dimension of homemaking.

PERCEPTIONS AND ATTITUDES OF FARM WOMEN

Problems of Farming and Farm Women

Questions about problems facing farmers, future plans in farming and how women might be integrated into agriculture were posed to the respondents using an open-ended format.

When asked about major problems facing farmers today, about one-third of the respondents mentioned one; another third mentioned two; and over one-quarter mentioned three or more. The most commonly mentioned problems were low prices for crops (57%), high costs of inputs (44%), government controls (17%), cost of labor (16%), government trade policies (14%), difficulty of getting good labor (9%) and weather (9%) (see Figure 16).

Table IX. Correlations of Women's Involvement with Farm and Individual Level, Characteristics and Attitudes of Women on Farms (product-moment correlation coefficients)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
[illegible]																								
1. General involvement index																								
2. Management support services index	.85**																							
3. Production decision making index	.85**	.69**																						
4. Production tasks index	.73**	.45**	.49**																					
5. Homemaking index	.05	.08	.03	.06																				
FARM CHARACTERISTICS																								
6. % Farm crops/grains	-.02	-.02	-.03	.06	.02																			
7. % Farmed protection	.28**	.26**	.21**	.13*	.00	-.28**																		
8. % Farm crops	.06	.02	.07	.07	-.06	-.41**	-.24**																	
9. # Acres farmed (owned & leased)	-.23**	-.17**	-.20**	-.11**	.06	.01	-.01	-.24**																
10. Income from farming	-.13*	-.05	-.10	-.14*	.07	.16**	-.16**	-.12*	.54**															
11. % of vegetables and fruits consumed which are product of own farm	.28**	.23**	.24**	.25**	-.04	-.12*	.15**	.16**	-.24**	-.17**														
12. Hours per week spent on farm work during peak season by wife	.34**	.48**	.41**	.31**	-.01	-.06	.16**	.10	-.13*	.01	.28**													
13. Involvement of extended family in farming operation	.28**	-.25**	-.27**	-.18**	-.02	.16**	-.08	-.15**	.26**	.25**	-.03	-.07												
14. % of labor supplied by hired help	-.23**	-.19**	-.22**	-.22**	.02	.15*	-.27**	.05	.37**	.42**	-.11	-.25**	-.17**											
INDIVIDUAL LEVEL																								
15. Residence on farm	.23**	.19**	.20**	.15**	.07	-.08	-.00	.19**	-.09	.07	.26**	.28**	.07	-.14*										
16. Education of wife	.14*	.13*	.15**	.08	.01	.16**	-.03	-.04	.01	.03	-.11*	-.02	-.10	.14*	-.12*									
17. Age of wife	-.32**	-.16**	-.20**	-.16**	-.03	-.17**	-.01	.13*	-.02	.00	.12*	-.04	.14*	-.05	.12*	-.12*								
18. # memberships in agricultural organizations	.33**	.31**	.32**	.21**	.15**	-.01	-.02	.08	-.01	-.01	.18**	.21**	.02	.10	.07	.13*	-.03							
19. # memberships in civic or volunteer associations	.08	.10	.07	-.02	.04	.15**	-.18**	.06	-.07	.07	.02	.05	-.06	.13*	-.07	.16**	-.17**	.24**						
20. Use of cooperative extension services	-.16**	-.15**	-.11*	-.13*	-.20**	.07	.00	.02	-.20**	-.19**	-.03	-.01	-.11	-.16**	-.12*	-.23**	.16**	-.15**	.00					
21. Hours husband spends on outside job	.20**	.18*	.18*	.29**	-.00	-.03	.09	.03	-.22**	-.23**	.04	.02	.16**	-.13*	.04	-.03	-.12*	-.03	-.01	.16**				
ATTITUDES OF WOMEN TO FARM																								
22. Considers self to be a farmer/rancher	.23**	.17**	.09	.08	.03	-.10	.19**	.11*	-.01	-.01	.14*	.22**	.20**	-.04	.28**	-.15**	.09	.10	-.07	.00	.00			
23. Perceived impact of technology on women's work on farm	.23**	.25**	.21**	.01	-.06	-.07	.15*	-.10	-.03	.03	.03	.25**	-.00	-.19**	.09	.07	-.03	.08	-.05	.13*	-.00	.14*		
24. # of perceived problems for women on farms	.18*	.17*	.10	.08	.13*	.05	.10	-.03	.05	.08	-.03	.02	-.08	.08	-.02	.06	-.22**	.14*	.17**	-.06	-.05	-.02	-.03	
25. # of division of labor changes mentioned as desirable	.18*	.17**	.17**	.10	-.09	.06	-.01	.06	-.03	.14*	-.01	.08	-.03	.06	.04	.15**	-.28**	.10	.16**	-.10	.08	-.07	.02	.22**

* = significant at the .05 level
** = significant at the .01 level

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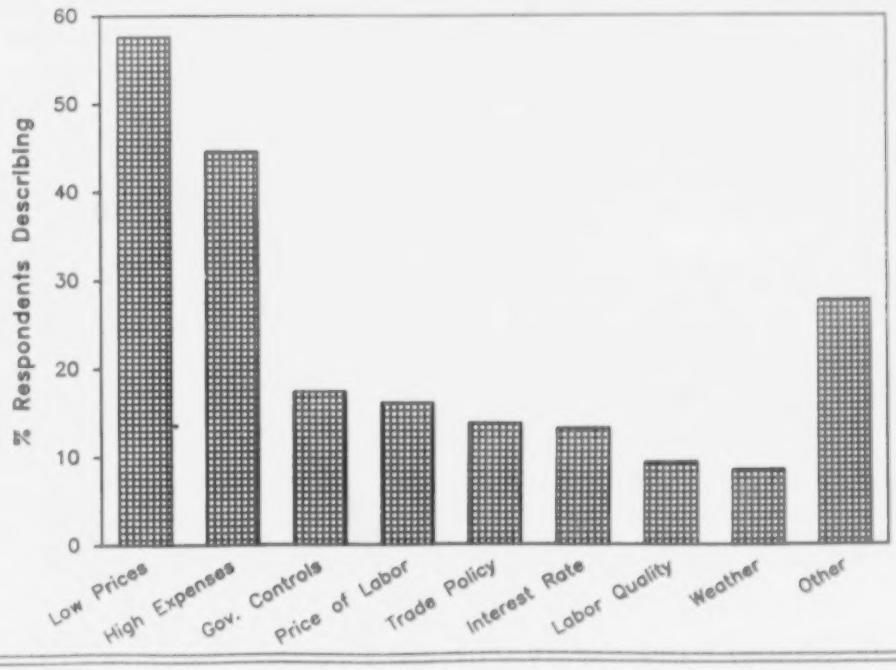
Figure 16: Perceived Problems Facing Farmers



The following typifies some of their comments. "People in the city don't understand what goes into growing crops. They want things big and beautiful without sprays and they demand low cost for the consumer without knowing the costs that go into products." Another said, "Expenses are so high that products are selling at depression prices." Another said, "The government! Its policies make it too hard on farmers. We ought to exercise more supply and demand. Government ought to keep its nose out of farming." Still another claimed, "Unless you are diversified and own a lot of land and have a lot of money, you are not going to survive." Finally, "We face extinction by big corporations and politics--we face rising costs and falling prices."

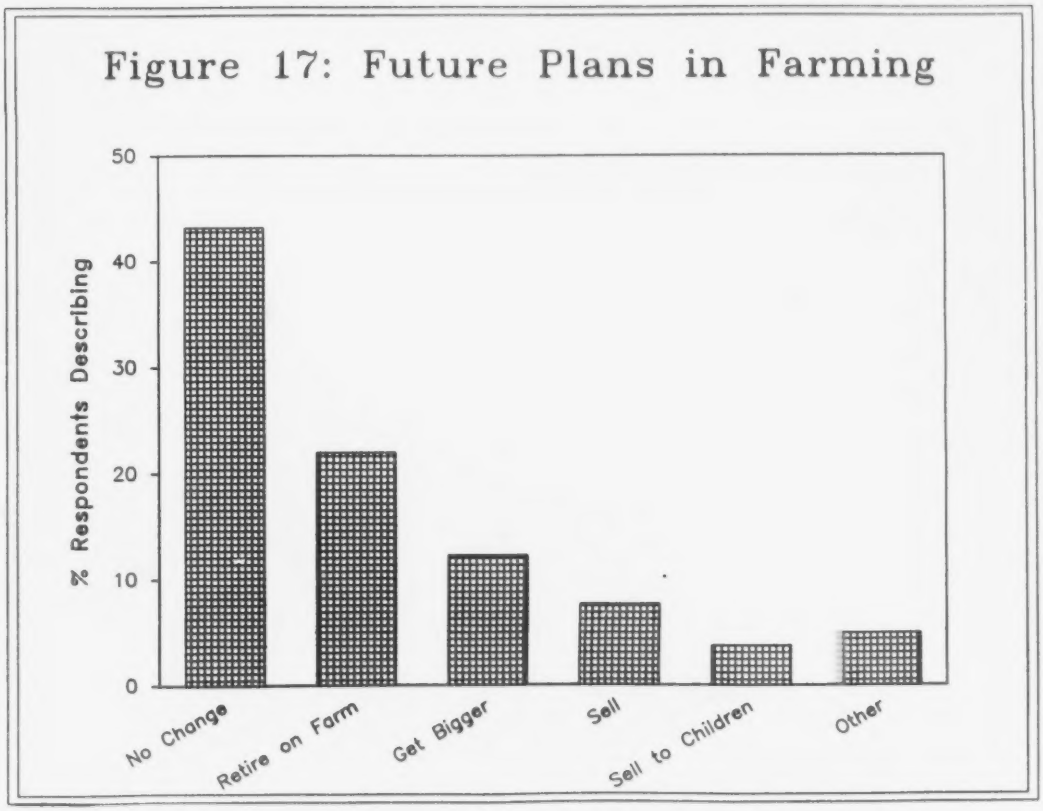
Only about one-half of the persons interviewed felt that farm women face special problems. Those problems most frequently mentioned were a tight budget (11%), stress due to the uncertainty of farming (8%), absence of husband and loneliness (7%) and lack of respect in a man's field (6%). On the other hand, when asked about problems facing farmers in general, all except one felt that farmers face major problems today. It appears that Yolo County farm women do not see themselves as involved in a separate class struggle, rather they identify with the farm household in the struggle to save the family farm. Data from the Jones and Rosenfeld study support this idea (Jones and Rosenfeld 1981).

About one-quarter of the respondents mentioned problems affecting the entire family. In doing so, they occasionally mentioned a woman's responsibilities in keeping the farm going. "The small farmer will keep going out of business. Consolidation is taking over. More farm women will have to be employed off the farm to pay the bills."

The Future of Farming

When asked about future plans in farming, almost one-half (43%) indicated no change and almost one-quarter (22%) indicated that they would retire on the farm (see Figure 17). Another 18% intended to sell out (10% outside the family and 8% to their children). Regarding changes in size, 12% intended to expand and only 1% to decrease.

A wide range of suggestions were given when the respondents were asked how young women might best be integrated into agriculture. The most common suggestion was to go into an ag-related business (28%). One woman said: "I don't know if they'll (men) accept what a woman says out in the field . . . the off-branches of farming would be a good start. Be a fertilizer dealer or consultant. It's almost prohibitive to start up in actual farming."



Others encouraged women to enter farming. For example, ". . . they shouldn't be afriad of getting into it. They can do it. Apply for jobs in management, or in brokering. Go for it! Don't be intimidated in this field--women can get the same agricultural issues across better than a man can."

Others (19%) emphasized the importance of experience: ". . . there are three 'musts' for women who want to farm: you must love farming, you must have experience and you must have contacts (to take advantage of buying into partnerships).

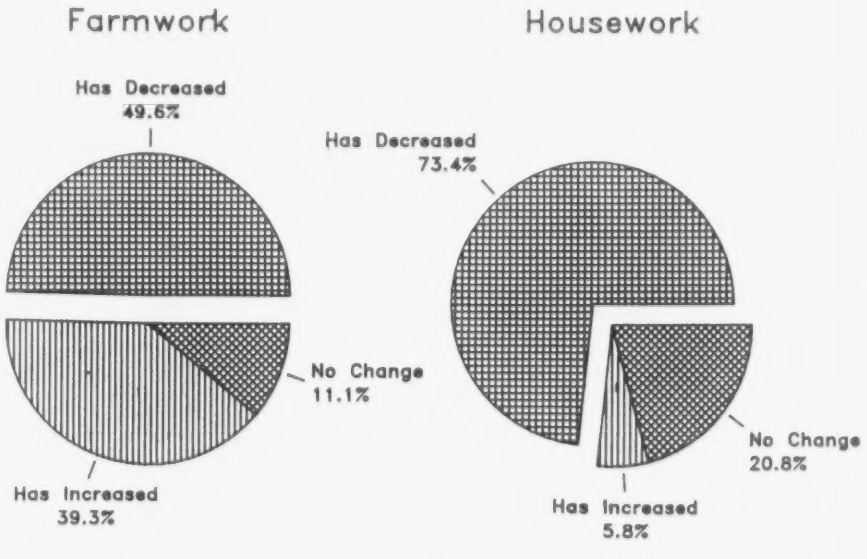
About 13% suggested marriage as the best way to get into farming. Another 12% urged avoidance of the physical or manual aspects of farming and

emphasized the managerial or professional side of farming. Only about 9% mentioned a lack of opportunity because of discrimination. Others agreed that discrimination exists but believed it could be overcome. "A woman, if she's well trained, can do the job as well as a man. But there is still discrimination against them. Hang in there! Keep at it! . . . or marry a farmer."

The Perceived Impact of Technology

More than one respondent pointed out that modern technology has made it possible for women to do the same farmwork as men regardless of so-called "physical limitations." One of the most interesting findings covers the impact advancements in technology has had on the amount of farmwork and household work performed by women in the last 20 years (Figure 18). Almost three-fourths of the women see technology as having decreased the housework they do. One-fifth saw the amount of housework remaining the same and less than one-sixth perceived an increase in housework.

Figure 18: The Impact of Technology



CONCLUSION

Research Results

As predicted in the first hypothesis there was a negative relationship between the measures of involvement in farming and the numbers of acres farmed (owned and leased) as well as income derived from farming.

This parallels what has been found in various studies throughout the U.S. It appears that smaller operations give women a greater opportunity to assume an active role (Gasson 1981; Hill 1981; Kalbacker 1983; Scheuring and Thompson 1978; Wells 1970). This is shown in Table 21. Data in the present study indicates that this appears to be especially true for production decision-making and management information support. While the need for women to actively participate in physical labor is evident on small farms (less than 180 acres) is not necessarily true for medium (180-2000 acres) or large (over 2,000 acres) farming operations which are likely to have access to other types of labor inputs. The phenomenon of greater participation by women on smaller farming operations is a result of the need for the entire family to use their total resources for survival rather than due to a greater opportunity for women to participate on small farms. This is supported by the inverse relationship between both percent of labor supplied by hired help ($r = .25$) and involvement of extended family in farming operations ($r = .28$).

Table 21

Percent Female Responsibility for Farming Activities

Variables	Small Farms (less than 180 acres)	Medium Farms (180 - 2,000 Acres	Large Farms Over 2,000 Acres
Total Involvement	18	14	10
Production Decisions	18	12	7
Management Support	28	25	20
Task Participation	6	2	3

While it might be argued that since hired help is used principally on larger operations this variable is only indirectly reflecting farm size, it would be much more difficult to make the same case in regards to the variable that taps labor supplied by the extended family. In fact, although our first hypothesis seems true it will later be shown that farm size is spurious and only indirectly reflects the need for labor resources which in turn creates "opportunity" for women to participate in farming.

In the second hypothesis it was predicted that involvement in farming will be positively related to participation of the extended family in the farming operation and negatively to the use of hired labor. The latter proved true with the indicators involvement in farming being negatively related to the use of hired labor ($r = -.25$). However, the relationship between involvement and extended family ($r = -.25$) turned out to be the opposite from what was predicted. Thus, the wife is more likely to become directly involved in order to maintain the farm operations if assistance is needed but other labor options are unavailable.

There are, however, some differences between farming operations in which the wife is involved, and farming operations in which the extended family is involved. Farms characterized by the former are also significantly more self-sufficient in producing food for the household ($r = .28$) and tend to have more contacts with agricultural organizations ($r = .33$). Also, where women are involved in the farming operation, they tend to believe that technology has allowed them greater participation ($r = .22$) as opposed to having decreased it (the size of the farm operation is not significantly related to this variable). While this finding lends support to this study's hypothesis that women who are more involved in farming will perceive technology as having

increased their work, a longitudinal study would be necessary to determine the actual impact technology has had on work.

The literature suggests that women contribute more to some types of agricultural production than to others. This is particularly true in regards to raising animals. This study supports this as shown by the positive association ($r = .26$) between percent of production devoted to animals and women's involvement in the farm operation.

In contrast, the variable tapping the homemaking dimension was with few exceptions unrelated to other variables in this study. There is a positive association between those women who are primarily responsible for homemaking ($r = .13$) or management support services ($r = .17$) and the number of perceived problems that they see for women on farms. This may indicate a lack of fulfillment or job dissatisfaction. However, those women more involved in farming also tend to perceive more problems. Thus, involvement of any kind is associated with the perception of problems ($r = .14$), although the types of problems perceived may differ. In contrast, changes in the division of labor are seen as being desirable only by those who are involved in the farm operation. Those involved in homemaking activities were slightly negatively associated ($r -.09$) with the desire for division of labor changes. While it was predicted that involvement would increase awareness of problems and desire for changes in division of labor, lack of desire for changes in division of labor among women engaged primarily in homemaking was not expected. As forseen, the respondent's education was positively associated with both perception of problems ($r = .13$) and desire for changes in division of labor ($r = .15$). Age was negatively associated with each ($r = -.22, -.28$).

The life cycle of the woman was also examined in terms of types of involvement. It was found that the major determinant of involvement in farming was age. The younger women under age 35 tended to be more involved in the farm operation. This was true even for those with young children under age six. But, those with young children were less likely to be associated with making production type decisions. All other stages of the life cycle tended not to be involved except for middle-aged women (between age 35 and 65) whose children were grown and had left home possibly leading to the "empty nest syndrome" previously described. Longitudinal data is necessary in order to determine whether these differences in involvement are part of a life cycle or are a result of differences in opportunities, beliefs and attitudes of different generations.

Finally, as predicted, residence on the farm was positively associated with involvement ($r = .23$) as was the perception of self as a farmer ($r = .15$). However, there was no relationship between farm background and involvement with the farming operation.

Multiple regression equations were run in order to guage the importance of each of the principal measures used to predict involvement in the farming operation. Although over 200 variables make up this study, only the principal variables discussed in the literature were the major determinants of women's involvement in farming.

Table 22 presents the results from a regression equation where the following variables predict involvement: percent animal production, involvement of the extended family in the farming operation, education of the wife, job hours per week spent by husband on off-farm work, residence, percent labor supplied by hired help, age of wife and number of acres farmed.

Table 22

Table 3. Involvement as Predicted by Farm and Individual Level Characteristics

Independent Variables	r	R square	Beta	t	Significant t
% Animal production	.26	.024	-.156	-2.36	.019
Involvement of extended family in farming operation	-.28	.048	-.231	-3.45	.001
Education of wife	.14	.027	.187	2.87	.005
Job hours per week spent by husband on off-farm work	.26	.015	.126	1.95	.053
Residence on farm	.23	.039	.213	3.26	.001
% labor supplies by hired help	-.25	.027	-.199	-3.04	.003
Age of wife	-.22	.036	-.184	-2.62	.010
# acres farmed (owned and leased)	-.20	.001	-.027	-0.37	.715

R square = .316
Adjusted R square = .285
R square change = .320
F = 10.225

If a variable did not significantly correlate with the general index of involvement it was excluded from the regression equation. For example, the number of job hours per week spent by the husband on off-farm work was significantly related with involvement ($r = .26$), but the variable measuring the wife's outside work was not significantly related with involvement ($r = .07$) and thus was excluded. This seems to indicate that while the husband's involvement with outside work may cause the wife to assume more of the farming responsibilities the reverse does not seem to be true. In fact, the slight (but not significant) positive relationship may indicate that many women have a off-farm occupation in addition to their farming responsibilities.

The variables in this regression model together explain approximately one-third of the variance. An F value of over 10 also proved to be significant at the .0001 level.

All of the variables mentioned proved significant using student's t as a test of significance, except for the size of the farm operation. Contrary to expectations the latter was not significant in explaining women's involvement. This proved true despite checks for curvilinearity. The most significant variables proved to be involvement of the extended family in the farming operation, residence and use of hired labor. As discussed previously it seems that women form a labor reserve, taking on farm tasks when there is no other option available. This also explains why the husband's off-farm employment is significant while the wife's outside employment is not in determining her participation in farming. Although this has not been given adequate consideration in the agricultural sector, it has been extensively reported in other sectors of the economy. It should come as no surprise, then, to find similiar patterns in agriculture. Whether or not a woman

resides on the farm also proved to be a factor in her involvement in the farm operation. Obviously, those living on the farm are much more likely to be involved. Finally, as predicted, education and age factors influenced involvement. Women who are younger and more educated are more likely to assume active roles in farming. This finding holds true despite conflicting with past research on Wisconsin farm women which found that women with less education were more likely to participate (Timper 1981). Animal production in particular is an area of farming that women are likely to participate in, a condition extensively documented in the literature (Kalbacher 1983; Ross 1983; Wilkening and Ahrens 1979).

The average farm in our study is 541 acres. A wide diversity of crops including row and grain crops, orchards, and livestock and poultry proved important. Larger farms tended to be oriented more towards row crops whereas smaller farms tended to more likely be orchards. Over 90% of these farms had irrigation on at least part of their land.

Over 68% of the farms were family or individually owned with 13% family held corporations and 19% partnerships.

Discussion

In this research the principal factors determining involvement of women in farming operations proved to be the need for the wife to participate when alternative options for labor did not exist. Therefore, while size of farm operation is associated with female participation it appears to be either a spurious or indirect factor. This is a distinction missed by previous studies which have shown size of farming operation to be the direct principal causal factor of female farming involvement. Smaller farms generally cannot access hired labor as well as bigger operations. If males in the family unit (either

husband, sons or extended family) do not or are not able to participate sufficiently then the wife assumes responsibility. The fact that this study found that more than three times as many households had sons over age 18 living with them as opposed to daughters of the same age may also reflect this phenomenon of giving preference to male over female labor input. Thus sons may be encouraged to stay in farming whereas daughters are not perceived as being a source of farm labor. Previous research (Dorner 1981) suggests that the farm labor input of daughters is minimal and while wives may engage in farmwork, daughters are only assigned housework.

The male bias inherent in Census of Agriculture data collection has contributed to under-estimation and lack of recognition of the direct impact women have on farms. While one-third of the women surveyed had outside jobs and were thereby in many instances supplementing the income of marginal operations, over 40% of the women were actively involved in over one-half of the items measuring farm involvement (this excludes homemaking items where the vast majority of wives took primary responsibility). Altogether this describes a very active and difficult role for women in farming where there are independent financial and labor resources. Hence, they may hold outside jobs and be principally responsible for household duties while also assisting in operation of the farm. Therefore, decision-making and division of labor needs to be considered within the total family context.

Both age and residence proved important factors in explaining the likelihood of holding an outside job. Those living on farms appeared to have less opportunity to work outside the farm. This compounds the difficulty for marginal farm operators to survive since a higher percentage of farm wives reside on smaller farms that are most likely to need outside income sources.

There appears to be two basic "types" of participation for women on farms. One is that of being a "homemaker" while the other is that of actually performing farm operation tasks. Five dimensions were obtained when the 19 measures of participation were factored. However, the first factor proved to be the most significant in accounting for the majority of variance. It clearly demonstrated that the two major types of participation, "farming" and "homemaking," are quite separate.

Not all farm women in Yolo County are content with their roles--44% expressed role satisfaction as compared to 90% of the women surveyed nationally by Jones and Rosenfeld (1981). Given the scores they gave themselves on the various dimensions of involvement, most farm women consider their roles in the agricultural enterprise to be minor. In decision-making, for example, farm women averaged 19% of the total responsibility. They averaged 8% of the responsibility for task participation and 13% of management support services. Other interviews with California farm women support this finding (Scheuring and Thompson 1978).

Most farm women liked living in rural areas because of privacy, peace and tranquility. However, isolation is most often mentioned as being the principal disadvantage.

As previously mentioned, our analysis suggests that those more actively involved in farming perceive more problems for farm women while those relatively more involved with homemaking perceive fewer problems (r -.09). This may be a reflection of both the greater awareness that firsthand knowledge affords and the fact that female participation is more likely on marginal operations. Those who are younger and better educated are more likely to perceive the need for change. This was particularly true for those with an educational background in agriculture.

Over three-fourths of the respondents have home gardens or orchards with slightly less then one-half owning livestock or poultry. Over two-thirds preserved part of the food they and their families consumed. Less than one-fourth of the farms engage in direct marketing of produce. The wife tends to take principal responsibility for those farms that do direct market.

Regarding recreational activities, in order of popularity respondents chose traveling, sports or exercise, outdoor activities and reading. In most cases decisions regarding recreation are shared equally. But when one person decides it is much more likely to be the wife.

While technology is generally perceived as reducing the amount of work women perform on the farm, about 40% of the respondents see it as allowing increased work. These persons typically are associated with smaller farm operations. This may be explained, in part, by the fact that technology has made it possible for more women to directly engage in all aspects of farming, some of which were hitherto the providence of men. One farm woman in our survey reflected this when she said: ". . . anything a man can do, a woman can do . . . women aren't physically the same, but we have the technology to do the work--use it!"

Current trends show an increase in small, part-time farming operations. It has been suggested that farming is becoming a way through which many families seek a more satisfying lifestyle. If so, the role of women may become increasingly important in farming, although for different reasons. Off-farm employment creates structural changes in the labor and capital processes of farm enterprises (Coughenour and Saranson 1983), thereby resulting in more opportunities for women in the farming operation. This may explain in part why females early in the life cycle are more likely to

participate in farming. Age may not matter as much as the historical change in the structure of farming, a double edged condition which has simultaneously created more opportunities as well as placed more demands on women to work on the farm.

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APPENDIX A

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DEPARTMENT OF APPLIED BEHAVIORAL SCIENCES
COMMUNITY STUDIES AND DEVELOPMENT
HUMAN DEVELOPMENT AND FAMILY STUDIES

DAVIS, CALIFORNIA 95616

SAMPLE

Date

Name
Street Address
City, State, Zip

Within a week or so we will be calling you from UC Davis for assistance in a research study on women in agriculture. We are interested in Yolo County women who are either farming or have families who farm. Women have played a leading role in Californias' agriculture from the beginning, but there is little documentation of this.

When you are called, the interviewer will ask if it is a convenient time for the survey, which will take about twenty minutes. If not, please suggest a more convenient time for the interviewer to return the call.

Your help in finding out about women involved in farming in our state is essential to the study's success. The results will be especially important to those of us who are advising the increasing numbers of young women who major in agriculture at the University of California at Davis. In fact over half the students in the College of Agriculture and Environmental Sciences at Davis are female. We will be glad to send you a copy of the results of our study. They will be available to the public as well.

If you have any questions, please don't hesitate to ask the interviewer. Or you may contact me by phone at (916) 752-1804 afternoons; or (916) 752-2855 mornings, or by mail.

Thanks for your participation,

Cordially,

Orville E. Thompson, Project Director
Applied Behavioral Sciences

CELEBRATING 75 YEARS OF TEACHING, RESEARCH AND PUBLIC SERVICE

OET:lcw

APPENDIX B

FARMWOMEN SURVEY -- 19XX Date Time Interviewer Result

Name _____ _____

Telephone _____ _____

Street _____ _____

City _____ _____

Hello. Is this the __(last name)__ residence?

[If no]

The number I was calling is _____ and it was for the (first and last name) residence. (If wrong number, terminate with -- "I AM SORRY TO HAVE BOTHERED YOU.")

[If yes]

This is __(interviewer's name)__ at the University of California at Davis. I am calling you from the College of Agriculture and Environmental Sciences. We are doing a research study on farm women in Yolo County. Your name was selected in a random sample. Did you receive the letter informing you of our study earlier this week?

[If no]

Well, this is a voluntary study of the attitudes and practices of women who are either directly involved in farming, or whose husbands have farms or ranches. We are trying to get an idea of how active Yolo County women are in agriculture so we'd like to talk to those who are not actively involved as well as to those who are. We've drawn up a survey that takes about 15 minutes to complete over the phone. You may choose not to answer any of the questions you do not wish to, although our University benefits from your participation.

[If yes]

As explained in the letter this is a voluntary study and although you may choose not to answer any of the questions, our University benefits from your participation.

Our survey consists of four parts: the first part is about the farm household, the second about the farm enterprise, the third concerns decision-making and division of labor, and the fourth attempts to gain some of your perceptions on farming.

I'd like to start with some general questions about you and the other members of your household.

1. Were you raised on a farm or ranch?

No 0
Farm or ranch 1
Don't know 8
Refused 9

2. Do you now live on a farm or ranch?

No 0
Yes 1
Don't know 8
Refused 9

[IF NO]

Then you live in an urban area?

No 0
Yes 1
Don't know 8
Refused 9

Where?

3. Do you have a spouse living with you?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

How old is he? _____

[IF NO]

Were you ever married?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

Are you divorced or separated or is your husband deceased?

Deceased 1
Separated or divorced 2
Don't know 8
Refused 9

4. Do you have any children?

No. 0
Yes 1
Don't know 8
Refused 9

5. How many people live in your household? (including college kids that are still dependent) _____

   How many under 7? _____

   How many between 8 and 12? _____

   How many between 13 and 18? _____

   How many over 18? _____

6. What about you? How old are you? _____

7. Ok, let me verify this. You do/do not have a spouse.
   You do/do not have children.

   [If yes spouse, yes children] choose form A 1

   [If no spouse, no children] choose form B 2

   [If no spouse, yes children] choose form C 3

   [If yes spouse, no children] choose form D 4

8. Do the children help with the farmwork, either in the field or tending animals?

   No 0
   Occasionally 1
   Yes 2
   Not applicable.....7
   Don't know.....8
   Refused 9

9. Do they help with the housework?

   No 0
   Occasionally 1
   Yes 2
   Not applicable 7
   Don't know 8
   Refused 9

10. Are any of your or your husband's relatives involved with the farm in any way?

    No 0
    Yes 1
    Don't know 8
    Refused 9

11. How many years of formal education do you have?

    _____ years of education

12. Did you get a degree?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

What was your highest degree?

High school 1
Jr. college or technical .....
Certificate 2
Undergraduate 3
Graduate 4
Don't know 8
Refused 9

What did you study?

Animal science 1
Applied economics 2
Applied behavioral sciences ..3
Biological sciences 4
Environmental sciences 5
Food, nutrition, textiles, and consumer sciences 6
Plant science and pest and disease management 7
Resource sciences and engineering 8
Business or administration ...9
Education 10
Health area 11
Engineering 12
Social sciences 13
Arts and humanities 14
Physical sciences other than those previously mentioned 15
Interdisciplinary (general education) 16
Other 17
Don't know 98
Refused 99

13. How many years of formal education does your husband have?

_____ years of education

14. Are you included on the farm payroll?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

For how many hours per week are you listed?

_____

15. Are you employed in a position other than homemaking or farming?

No 0
Yes 1
Retired 2
Not applicable 7
Don't know 8
Refused 9

[IF NO]

Are you retired?

[IF YES] [CODE: US CENSUS CLASSIFICATION]

What do you principally do? _____

Executive, administrative and managerial occupations.....1

Professional specialty occupations (engineers, health care diagnosing, teachers, librarians, counselors) 2

Health technician, nurse, or other technician 3

Sales occupations 4

Administrative support occupations (computer operator, clerical, financial records processing, mail and message distributing) 5

Service occupation in private household 6

Protective services (police, fire) 7

Service outside household (food, cleaning in buildings) 8

Farming 9

Fishing and forestry 10

Precision production, craft and repair occupations 11

Transportation occupation 12

Operators, fabricators and laborers 13

Other (Please describe) 14

_____

Refused 99

How many house per week, on the average, do you work?

_____
Not applicable 997
Don't know 998
Refused 999

16. Are you involved in any agricultural organizations?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

Which ones?

CA Certified Organic Growers .1
Farm Bureau 2
Cal Women in Agriculture 3
Grange 4
Cooperative Extension 5
4-H 6
Grower Assn. 7
FFA 8
Farmer's Market 9
CA Assn. of Family Farmers ..10
Other 11
Number of organizations _____

17. Are you involved in any civic or volunteer work?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

What kind?

Religious 1
PTA (or other school activities) 2
Scouting 3
League of Women Voters 4
Other civic associations 5
Fraternal organization 6
Political organization 7
Health related 8
Sports 9
Cultural 10
_____ 11
Other 12
Number of organizations _____

18. Is your husband employed in a position other than farming?

No 0
Yes 1
Retired 2
Not applicable 7
Don't know 8
Refused 9

[IF NO]

Is he retired?

[IF YES] [USE CENSUS CLASSIFICATION]

What does he principally do?

Executive, administrative and managerial occupations.....1

Professional specialty occupations (engineers, health care diagnosing, teachers, librarians, counselors) 2

Health technician, nurse, or other technician 3

Sales occupations 4

Administrative support occupations (computer operator, clerical, financial records processing, mail and message distributing) 5

Service occupation in private household 6

Protective services (police, fire) 7

Service outside household (food, cleaning in buildings) 8

Farming 9

Fishing and forestry 10

Precision production, craft and repair occupations 11

Transportation occupation 12

Operators, fabricators and laborers 13

Other (Please describe) 14

_____

Refused 99

How many hours per week, on the average, does he work?

_____
Not applicable 997
Don't know 998
Refused 999

Now, I'd like to ask you bout the farming operation itself.

19. Under what form of business oragnization do you now operate your farm?

Describe:

_____

_____

_____

Family farm 1
Partnership 2
Corporation 3
Custom business only 4
Other 5
Not applicable 7
Don't know 8
Refused 9

20. How much land does your household currently farm?

_____ acres
Don't know 8
Refused 9

[IF OWN LAND]

Is any of the land listed solely in your name?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

How many acres?

_____
Don't know 8
Refused 9

21. Do you lease any land to other people?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

How many acres?

_____
Don't know 8
Refused 9

22. Do you lease any land from someone else?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

How many acres? _____

Don't know 8
Refused 9

23. Do you farm any land under some other kind of arrangement?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

Under what kind of arrangement? _____

How many acres? _____

24. Do you consider yourself either farmer or rancher?

No 0
Yes 1
Don't know 8
Refused 9

25. Is any part of your operation organically grown?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

What part? _____%

Don't know 998
Refused 999

26. Do you own any livestock or poultry?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

Do you sell any of your animal products or are they for home use?

Sell 1
Home use 2
Both 3
Don't know 8
Refused 9

27. How many members of your household are currently engaged on a full-time basis in your farming (ranching) operation?

_____

28. Do you consider yourself engaged on a full-time basis in the operation?

No 0
Sometimes 1
Yes 2
Don't know 8
Retired 9

Now, I'd like to get an idea of how much hired labor you use.

29. Do you have a farm manager?

No 0
Yes 1
Don't know 8
Refused 9

30. Do you have any custom work done for you?

No 0
Yes 1
Don't know 8
Refused 9

31. Do you do any custom work for others?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

What kind?

_____

How big is the operation?

_____

32. Do you have any outside help with the housework?

No 0
Yes 1
Don't know 8
Refused 9

33. Taking into consideration peak-season work, and year-around work, that is, all the work done on the farm, what proportion is provided by hired labor?

average _____ %
Not applicable 7
Don't know 8
Refused 9

34. What are your main crops or animal products measured by percentage of gross sales or gross receipts before taxes?

Ornamentals .....___%
Grapes.....___%
Tomatoes.....___%
Other vegetable crops....___%
Rice.....___%
Wheat and barley.....___%
Corn.....___%
Forage, other field crops (pasture & alfalfa) ...___%
Fruit and nut crops and firewood.....___%
Seed crops and/or nursery products.....___%
Livestock and poultry....___%
Apiary, livestock and poultry products .....___%
Oil seed crops .....___%
Don't know 8
Refused 9

[If don't know]

Could you rank them in order of importance as measured by gross sales?

Ornamentals ----------___
Grapes.....___
Tomatoes.....___
Other vegetable crops....___
Rice.....___
Wheat and barley.....___
Corn.....___
Forage, other field crops (pasture & alfalfa) ...___
Fruit and nut crops and firewood.....___
Seed crops and/or nursery products.....___
Livestock and poultry....___
Apiary, livestock and poultry products .....___
Oil seed crops .....___
Don't know 8
Refused 9

Number of sales categories mentioned _____

[Write in 7 by each crop if rank unknown]

35. Please provide an estimate of the percentage of your income gained from both on farm and off farm sources. How would you break down your income out of 100% given the following categories?

Crops	___%
Livestock and poultry	___%
Custom work	___%
Farm management	___%
Off-farm employment and investment	___%
Social Security	___%
Other	___%

36. Do you have a garden or orchard?

No	0
Yes	1
Don't know	8
Refused	9

[IF YES]

If it for family or commercial use?

Family	1
Commercial	2
Both	3
Don't know	8
Refused	9

37. Do you can, dry or freeze any of your food?

No	0
Yes	1
Don't know	8
Refused	9

[IF YES]

Who is responsible for preserving the food?

Usually spouse	1
Usually respondent	2
Both equally	3
Other household member	4
Hired help	5
Combo including respondent	6
Combo excluding respondent	7
Don't know	8
Refused	9

38. What percent of the food your family consumes do you produce on your farm? We are interested in two categories: 1) meat and dairy, 2) fruit and vegetables.

Of all the meat/dairy and fruit/vegetables you consume, how much do you produce yourself?

Meat/dairy	___%
Vegetables/fruits	___%
Don't know	998
Refused	999

39. Do you estimate your average gross farm income for 1983 to be under or over $100,000

Under $100,000.....1
Over $100,000.....2
Don't know 8
Refused 9

[IF UNDER]

Would it be:

Under $25,000 1
Between $25,000 - $50,000.....2
Between $50,000 - $100,000....3
Don't know 8
Refused 9

[IF OVER]

What would be a rough approximation of this farm income within units of $50,000. For example, would it be between $100,000 and

$100,000 to $150,000.....4
$150,000 to $200,000.....5
$200,000 to $250,000.....6
$250,000 to $300,000.....7
$300,000 to $350,000.....8
$350,000 to $400,000.....9
$400,000 to $450,000.....10
$450,000 to $500,000.....11
$500,000 to $550,000.....12
$550,000 to $600,000.....13
$600,000 to $650,000.....14
$700,000 to $750,000.....15
$750,000 to $800,000.....16
$800,000 to $850,000.....17
$850,000 to $900,000.....18
$900,000 to $1,000,000.....21
Over $1 million.....22
Don't know.....98
Refused.....99

40. Do you estimate your gross 1983 income from outside sources to be under or over $100,000?

Under.....1
Over.....2
Don't know.....8
Refused.....9

[IF UNDER]

Would it be:

Under $250,000.....1
Between $25,000 - $50,000.....2
Between $50,000 - $100,000....3
Don't know 8
Refused 9

[IF OVER]

What would be a rough approximation within units of $50,000. For example, would it be between $100,000 and

$100,000 to $150,000.....4
$150,000 to $200,000.....5
$200,000 to $250,000.....6
$250,000 to $300,000.....7
$300,000 to $350,000.....8
$350,000 to $400,000.....9
$400,000 to $450,000.....10
$450,000 to $500,000.....11
$500,000 to $550,000.....12
$550,000 to $600,000.....13
$600,000 to $650,000.....14
$700,000 to $750,000.....15
$750,000 to $800,000.....16
$800,000 to $850,000.....17
$850,000 to $900,000.....18
$900,000 to $1,000,000.....21
Over $1 million.....22
Don't know.....98
Refused.....99

41. Do you use a computer in your farming operation?

No.....0
Yes.....1
Don't know.....8
Refused 9

[IF YES]

What do you primarily use it for?

Accounting/management.....1

Assessing price information for marketing commodities...2

Equipment monitoring.....3

Employee payrolls.....4

Other farm related purpose....5

Describe: _____

[If not used for any of the above farm related activities:]

Educational tool.....6

Entertainment.....7

Don't know 8

Refused.....9

Who usually operates it?

Usually spouse.....1
Usually respondent.....2
Both equally.....3
Other household member.....4
Hired help.....5
Combo including respondent....6
Combo excluding respondent....7
Don't know.....8
Refused.....9

[IF NO]

Do you plan on buying a computer?

No.....0
Yes.....1
Don't know.....8
Refused.....9

[IF YES]

Who would operate it?

Usually spouse 1
Usually respondent.....2
Both equally.....3
Other household member.....4
Hired help.....5
Combo including respondent....6
Combo excluding respondent....7
Don't know.....8
Refused.....9

The next part pertains to decision making and division of labor on your farm. For each question we have several responses from which to choose. For example, in asking who usually decides what crops to plant each year, you could answer: I usually do, my husband usually does, we share equally in the task, some other household member does or we purchase the service. Please choose the most appropriate response for who makes that decision.

42. Who usually decides what crops to plant?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

43. What about plowing, disking, cultivating, or planting? Who usually performs those tasks?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

[IF YOU IRRIGATE]

44. Who is responsible for irrigating crops?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

45. Who does the other fieldwork without machinery?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

46. Who is responsible for animal handling such as cleaning, milking, feeding, and veterinary tasks?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

47. Who does the actual harvesting including running machinery or trucks?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

48. Who is responsible for supervising the work of hired labor?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

49. If you were to change the size of your operation, who would make that decision?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

50. If you were to change the size of your animal production, who would make that decision?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

51. Who usually runs farm errands--picking up repair parts or supplies?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

52. Who is responsible for deciding to purchase major farm equipment?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

53. Who usually seeks agricultural credit?

Usually partner.....1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

54. Who usually seeks information on farm matters from extension agencies (such as co-op extension, commodity groups, pesticide control)?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

55. Who is responsible for reading publications and checking market prices?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

56. Do you do any direct marketing?

No 0
Yes 1
Don't know 8
Refused 9

[IF YES]

Who is responsible for the direct marketing of products (such as farmers markets, produce stands, local grocers)?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

57. Who usually decides when to market products?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

58. Who is responsible for attending agricultural meetings?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

59. Who does the bookkeeping and scheduling for the operation?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

60. Who cares for the yard?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

61. Who is responsible for preparing meals?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

62. Who is responsible for caring for children including transportation to and from school activities?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

63. Who usually decides on recreation and social activities?

Usually partner 1
Usually respondent 2
Both equally 3
Other household or family member.....4
Hired help 5
Combo including respondent ...6
Combo excluding respondent ...7
Don't know 8
Refused 9

I'd like to get an idea of how you divide your time between farmwork and household work both during peak season and off season.

64. Does your schedule change with the agricultural season? Do you spend more or less time on household activities during the peak season for example?

No.....0
Yes 1
Don't know 8
Refused 9

[IF YES]

How many hours do you think you spend on farm related activities during the peak agricultural season?

_____ hours
Don't know 8
Refused 9

On farm related activities, during the off season?

_____ hours
Don't know 8
Refused 9

On household and family related activities during the peak season?

_____ hours
Don't know 8
Refused 9

65. What would you estimate to be the number of hours you have a week for recreation or leisure activities during the peak season?

____ hours per week peak season
Don't know 8
Refused 9

And during off season?

____ hours per week off season
Don't know 8
Refused 9

66. Are you satisfied with the division of labor within your household? In other words are you satisfied with the work roles that you and other household members maintain?

No.....0
Yes.....1
Don't know.....8
Refused.....9

67. If you could change the division of labor within your household, including farmwork, housework, and outside employment, that is, all the work that you and the other household members do, what would you change?

Nothing 0
I need more help w/housework..1
Other household members need to chip in more.....2
I need more free time.....3
My partner needs more free time.....4
I should be more involved with the farm.....5
Partner needs to spend more time w/the children....6
Other.....7
Don't know.....8
Refused 9

_____

_____

_____

_____

_____

68. What type of work do you prefer, housework, farmwork, or off farm employment?

Household.....1
Farm.....2
Off farm.....3
Neither.....4
Don't know.....8
Refused.....9

69. Keeping in mind advancements in technology and mechanization, do you think that the role of farm women has changed over the past 25 years?

No.....0
Yes.....1
Don't know.....8
Refused.....9

[IF YES]

How? _____

70. Do you think that technology and mechanization have had a positive or negative impact on farm women's roles? In other words, do you think it has provided greater or lesser access to farmng as a career?

Positive _____
Negative _____
Neither _____
Don't know 8
Refused.....9

71. What do you think are the biggest problems facing farmers today?

_____

_____

_____

_____

_____

_____

None.....1
Low prices for produce.....2
High cost of inputs.....3
High cost of labor.....4
Problems getting good labor...5
Too many gvt. regulations.....6
High interest rates.....7
Trade policies.....8
Weather.....9
Unpredictable market.....10
High taxes.....11
Small farmer squeezed out...12
Not enough respect.....13
Low morale.....14
Other (Describe):

_____

Don't know.....98
Refused.....99
[NUMBER MENTIONED] _____

72. What do you think the main problems facing farm women in your area are today?

_____

_____

_____

_____

_____

_____

None.....0

Same as above.....1

Loneliness.....2

Tight budget.....3

Stress, worry, insecurity.....4

Lack of respect.....5

Not enough say in the operation.....6

Irregular hours.....7

Work too hard, too much to juggle, not strong enough to do it all.....8

Having to work off farm.....9

Role confusion, divided loyalty.....10

Other.....11

Don't know.....98

Refused.....99

[NUMBER MENTIONED] _____

Describe: _____

_____

_____

_____

73. How do you think the roles of farm women will change over the next 10 years?

None.....0
Less farm, more off farm employment 1
More involved in management and decision making.....2
More involved in all aspects..3
More involved politically.....4
More difficult.....5
Other.....6
Don't know.....8
Refused.....9

Describe: _____

_____

_____

74. What are your future plans in farming?

_____

_____

_____

_____

_____

_____

No change 1
Get bigger 2
Get smaller 3
Get out 4
Retire 5
Turn over to kids 6
Computerize 7
Get more involved 8
Other 9
Don't know 98
Refused 99

Describe: _____

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